THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. IX. CHICAGO, OCTOBER 22, 1887. No. 17.

ORIGINAL ARTICLES.

RUPTURE OF THE UTERUS.

Read before the Section on Obstetrics and Gynecology, at the Thirty-eighth Annual Meeting of the American Medical Association, June, 1887.

BY WM. H. WATHEN, M.D.,

OF LOUISVILLE, PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN IN THE KENTUCKY SCHOOL OF MEDICINE; EX-PRESIDENT OF KENTUCKY STATE MEDICAL SOCIETY; CONSULTING GYNECOLOGIST TO THE LOUISVILLE CITY HOSPITAL, ETC.

The uterus ruptures only once in three or four thousand cases of labor, and many physicians of large experience have never seen a case; but it is so fatal in its results, that all cases, successful or otherwise, should be reported to enable us to form more accurate conclusions as to the best means of preventing the injury, or of saving the life of the woman after it has occurred.

Rupture of the uterus cannot always be anticipated, but in pelvic deformities, or unusual obstructions to natural delivery, as pelvic or uterine tumors, rigidity of the os, bands in the vagina, hydrocephalus of the child, and malpositions and deformities of the child; or in inordinate uterine action, cicatrices in the uterus from former wounds, and in previous disease or weakening of the walls, there is danger of rupture, which may be prevented. But the time allotted me will not admit of an extended notice of this subject in detail, so I must confine myself to the report of an interesting and fatal case that recently came under my observation, and conclude with a few suggestions as to the proper treatment when the uterus is ruptured. On Saturday, February 19, at 2:30 P.M., I was called in consultation with Drs. McDermott and Roberts to a Mrs. Mack in her tenth labor, with the following history: 35 years old, had always enjoyed good health, had been married fifteen years, and had given birth to nine living children without complications or difficulty. At 9 P.M. Friday, February 11, she felt feeble labor pains and sent for a midwife. The pains continued at long intervals until next morning, when the membranes ruptured and contractions stopped. She continued to go about and to manage her domestic affairs until 9 P.M., February 18, when she began to have feeble pains, but did not send for a doctor or midwife. At 11 P.M. her husband retired and heard no complaint from his wife until 12:30 A.M. February 19. She called for assistance, but did not appear to be suffering intense pain. Uterine contractions immediately ceased, and when the doctor reached her an hour later she was in profound collapse, nearly pulseless, with limbs cold to the trunk. In an examination at 2:30 A.M., I found the fœtal head lying loosely at the pelvic brim, with the body in the abdominal cavity, and the uterus contracted down to the right inguinal region. The limbs were distinctly felt through the abdominal walls. Bleeding had ceased, and there did not appear to be much blood in the peritoneal cavity. Her condition precluded the possibility of immediate delivery, and her husband would not consent to any operation until he could consult her spiritual advisor. We gave stimulants and applied several jugs of hot water about the woman. We left her at 4:30 A.M. with instructions to call us immediately, if any improvement was noticed. We did not expect her to live long, and were not a little surprised at 7 A.M. to find her improved, pulse better, and getting warm. We suggested abdominal section, but were told that her husband, who had gone for a minister, had left positive instructions that no operation should be performed in his absence. He did not return for an hour, and then her condition was as bad as when I first saw her.

With a desire that the woman should not die undelivered, we finally got consent to remove the child *per vias naturales*. Having given her ether and whiskey hypodermically, I delivered her with little effort of a dead child, and removed the placenta, without causing further laceration, hæmorrhage or shock. After replacing a bunch of intestines that had prolapsed through the rent into the vagina, the laceration was carefully examined. It was immediately on the left side of the uterus, extending through the walls from the os externum to the middle of the fundus, splitting the organ half into, leaving the severed edges widely separated. The lacerated surfaces were rounded, and there was an absence of physical conditions which characterize rupture in normal uterine tissue, indicating inflammation, ulceration, or fatty degeneration. A compress was put on the abdomen, and a binder applied to hold the torn edges together and prevent protrusion of the intestines. She died in a few hours, but as a necropsy was not permitted we could not verify the condition of the uterine tissues, though I am sure the laceration was due to some form of metritis, or to fatty degeneration. She had taken no ergot, and the contractions were too weak to have ruptured healthy tissues. I doubt if we

could have saved the life of this woman by any treatment, but had she been seen immediately after the rupture Porro's operation would have been indicated, for had the torn edges been sutured after Sänger's method union could not have resulted.

In view of the recent remarkable achievement in abdominal surgery, and recognizing the almost universal fatality in rupture of the uterus treated by expectancy after the removal of the child by forceps or version, I am surprised to find some well known medical writers and many good practitioners and surgeons, who refuse to recognize abdominal section as the best and safest treatment. Of course, the operation is not indicated in incomplete rupture where the peritoneal covering of the uterus is not torn, for in these cases neither blood, bloody serum, or liquor amnii has entered the peritoneal cavity to decompose and cause septicæmia, etc. But if the rupture is through the walls, abdominal section is the only rational treatment, and should be done, though the child may not have entered the abdominal cavity, or may have been delivered: the operation has few additional dangers, and removes many. If the discharges in the peritoneal cavity are carefully removed before decomposition or inflammation, the patient may have no untoward symptom from this cause. They may be perfectly wiped away, and the cavities of the abdomen, uterus and vagina may be made aseptic by irrigation with warm antiseptic water.

Porro's operation, and the improved Cæsarean section, are the only operations indicated in uterine rupture, the former being preferable in nearly all cases, as it is usually impossible to approximate the torn edges of the rent so as to get perfect union; and if the blood or lochia enter the peritoneal cavity it will cause inflammation and septicæmia, and result in the death of the woman. But where the uterine tissue is normal, and the rent even and regular, Sänger's Cæsarean section may be selected. Porro's operation is especially indicated in all cases in which there is retention of tissue elements in fatty degeneration due to malnutrition, or in retention of elements or substances that would empoison the blood, such as gangrene, putrid fœtus, etc. The success in the improved Cæsarean section where the uterus is not ruptured has been encouraging. There are reports of 39 operations with 12 deaths; a mortality of 30.77 per cent. If we exclude 5 cases performed as a *dernier ressort* in the United States when the women were exhausted, we have 34 operations, with 27 recoveries and 7 deaths: a mortality of 20.59 per cent.

In Créde's analysis of 26 cases we have 19 recoveries and 7 deaths; a mortality of 26.67 per cent., but in 3 of these cases septic infection existed before labor, in 2 grave cases it occurred during labor, and in 2 cases the patients died of other complications. There are 23 reported operations in Germany and Austria, with 19 recoveries and 4 deaths; a mortality of 17.4 per cent, but not a single death is referable to the operation. In 16 operations performed in the Maternity Hospital of Leipsic and the Dresden Maternity Hospital, by Sänger, Oberman, Donát, Leopold and Cohn, there were 15 recoveries and 1 death; a mortality of 6.25 per cent.; all the children were saved. Lawson Tait proposes to reduce the mortality to 5 per cent. in the Porro operation. We cannot expect these good results in operations where the uterus is ruptured, but if the woman is not in profound shock, and her condition is relatively good, timely abdominal sections should result in a success of 75 per cent. The danger is not so much from the operation itself, the mischief being already done by rending of the uterine tissues and hæmorrhage into the peritoneal cavity; and the profound shock of the nervous system will be exaggerated by further hæmorrhage. The operation should be done immediately, for if performed as a *dernier ressort* we must not expect success. All the pathological changes are against the late operation; for in the absence of shock, adventitious sacs, plastic adhesions, etc., will have formed, will prove troublesome, and will prevent success.

In conclusion, I beg to suggest for your consideration, the substitution of some form of abdominal section for embryotomy in all cases where the child is living. I have only alluded in this general way to a few prominent points, hoping to elicit discussion by the members familiar with these questions.

DISCUSSION.

DR. W. E. CALDWELL, Freeport, Ill.: In about twenty years I have only lost one patient from this cause. This woman had been delivered several times by instruments. I was called to her after the membranes had been ruptured for about twelve hours. The rupture of the uterus occurred in a few moments after my arrival at the house, and as the woman was *in extremis* I rapidly performed abdominal section with the hope of saving the child, but in that I failed. That is all of my experience in regard to rupture of the womb. It has been my lot to see Cæsarean section performed six or seven times, and in all of the cases I have seen the women recovered. The modern manner of performing the operation is by the entire removal of the uterus. I think no good operators at the present day leave the uterus in. I think in the case just given, if the doctor had been allowed to operate promptly, he could have done so with a fair prospect of saving the mother, if not the child.

DR. DELASKIE MILLER, Chicago: I desire to ask one or two questions of Professor Wathen before I say anything on the subject. I failed to fix the dates of the rupture of the membrane and the rupture of the uterus?

DR. WATHEN: The membranes ruptured about ten hours after the woman began in labor, and the pains ceased. The uterus ruptured about one week subsequent to that date; there were no uterine pains in the interval, nor had she taken ergot or anything of that kind. In reply to further questions, Dr. Wathen said: No one knows the condition of the child during this interval, when I first saw the patient the child was dead and the os was torn entirely through.

DR. MILLER: The case is most interesting, and to my mind illustrates the effect of indecisive action in the management of cases, for want of knowledge.

I have no doubt that many cases of rupture of the uterus would occur if cases were left to nature, and assuming, with the author of the paper, that there is a diseased condition of the uterus, this is to be apprehended. If there is softening of the wall of the uterus from fatty degeneration or the result of inflammatory action, it is most natural for the wall of the uterus to give way if a limited portion of the organ contracts normally, and rupture will result. The point I wish to call attention to is this: When labor has commenced and has proceeded so far that the membranes have ruptured, and the contraction of the uterus ceases, it is the duty of the accoucheur to interfere then and assist nature to accomplish the delivery. You may say the os uteri is not fully dilated. Then it is his duty to dilate it by proper means and effect a delivery. I would apprehend in the condition described that there was some abnormal condition present in the seat of the uterus and that some serious complication was to be feared. I would anticipate this and effect a delivery. Allow me to say what I would do before the rupture takes place, in my own management. I not infrequently attend cases of labor where the contractions continue and the patient suffers from severe pain. Many times these contractions, although not efficient in inducing dilatation of the os uteri are so severe as to cause the patient agonizing pain. These are frequently located in a circumscribed portion of the uterus and I apprehend that some serious complication may be impending. When I meet with a case of that kind where the pain is unusually severe I invariably assist nature in effecting a delivery. If the inferior segment of the uterus has been dilated and thinned out and the uterus continues to contract actively there is danger of rupture and I would at once adopt measures to produce full and sufficient dilatation of the os uteri and to assist delivery. I believe that I have frequently saved patients from this terrible complication of labor by prompt artificial delivery. I think the case reported very interesting. I am happy to say, since the question has been propounded, that in my individual practice I have never met with a case of rupture of the uterus. It has been my fortune to see two cases, which have confirmed the position I have taken; in both cases I believe the rupture was due to delay in active interference. If you will allow me a moment I will give in brief the details of a case of a medical man in this city who obtained his medical education in foreign countries, and therefore we would suppose was qualified for the practice. In this connection I would say that between the gentleman and myself the warmest feelings of friendship exist. This doctor was called at 2 o'clock in the morning to attend a woman in labor. He visited the woman immediately and upon examination found the os uteri partially dilated and the uterus contracting regularly; he left her, promising to return in three hours. When he returned he found dilatation increased considerably but not quite complete. The contractions of the uterus were attended with considerable suffering, but he believed in not interfering too actively in the processes of nature, and left his patient, saying he would come back in two hours, but fifteen minutes before he returned rupture had taken place and the patient was in collapse and did not recover. Who does not believe that at his second visit if he had applied the forceps, as he could have done, the patient would have been saved?

Dr. John Morris, Baltimore, Md.: I have listened to the paper with a great deal of interest. I have seen two, perhaps three cases of rupture of the uterus in my experience. Dr. Wathen says there is great difficulty in the diagnosis. There is no doubt great difficulty in foreseeing complications of this kind, but no primipara has ever ruptured the uterus—I do not believe any lady or gentleman in the audience has ever seen, heard or read of a rupture in a primipara. It generally occurs in women who have borne eight to ten children. If you are called to attend a woman over 40, who has borne eight or nine children, that woman is liable to this trouble. If in that labor she has great pain and uses involuntary struggles amounting to violence—for frequently I have seen Irish women do violence to themselves in their effort to expel the child—then interference is necessary. You must give large doses of opium and restrain the labor. This rarely occurs in women who have had only four or five children. In these cases of rupture you are not called upon to make any interference to dilate the uterus, in these women the dilatation takes place very readily and the less interference you make to restrain labor the better. That is my experience. If you foresee this trouble, apply your forceps if you can. Version should never be effected in a woman over 40 years of age, and no man should attempt version if he anticipates rupture of the uterus; he should apply the forceps or perform abdominal section. I am convinced that in the case reported if abdominal section had been performed in the beginning that woman would have been saved, because she showed such powers of reaction; the extremities became warm and reaction took place. With that reactionary power that the woman could have been saved by abdominal section seems to me the true theory and practice of obstetrics.

Dr. H. O. Marcy, Boston, Mass.: It is only within three months that I have seen my first case of rupture of the uterus. I will narrate it briefly because I think such cases should be put on record. The woman was possibly 35 or 38 years of age; she had had several pregnancies; at the pregnancy prior to the one of which I speak she had lost her child and the physicians told her pretty definitely that she must never have another baby, but did not tell her why. The doctor who was in attendance had watched her with care; the labor had gone on to a certain point uninterruptedly. The membranes had ruptured—it was a breech presentation—and the breech was well down in the outlet, when suddenly the pain ceased. I was sent for in consultation and this was the condition of things when I arrived. Delivery was effected without a knowledge of the condition of the parts at the time and the child, which was a very large one, was given to me for resuscitation, which took place. The woman was well cared for and everything was supposed to be satisfactory, the placenta came away and the parts were cared for, but within 24 hours

I saw this woman again in a state of collapse; temperature 103°, her pulse could not be counted, respiration about 40, abdomen swollen nearly as large as at delivery. The introduction of the hand into the vagina carried two fingers into the retro-uterine pouch; there was a certain amount of prolapse of the intestines and the cavity was filled with clots of blood. These were cleansed away and the uterus turned up through the cervix into the pouch of Douglas. A long glass tube, such as is used in Vienna, was introduced into the uterus and irrigated very thoroughly with 1:2000 of bichloride of mercury, carried into the uterine rent in the base of the pelvis, and cotton dusted with iodoform was carried up into the vagina. From that time she began to rally and at the end of two days was apparently in convalescence. The case went on through a slow but very satisfactory convalescence and there can now be seen quite clearly a repair of the rent about 3 inches in length. This is the only case I have seen that comes within the limit of the scope of the paper.

SYMPATHETIC OPHTHALMIA.

Read in the Section on Ophthalmology, Otology and Laryngology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY C. M. HOBBY, M.D.,
OF IOWA CITY, IOWA.

The condition to which the term Sympathetic Ophthalmia is applied is well understood, and while the pure pathologist may object to the term, the clinician must still employ it, until a more scientific one is furnished. Practically, the name is of little importance, but it is of great importance that we separate the differing conditions grouped under the name. For example, ought the so-called sympathetic neuro-retinitis and the occasional lesions of the cornea, following disease or injury of the other eye, to be classed with the inflammations of the uveal tract, that make sympathetic ophthalmia so much to be dreaded?

The object of the present paper is to present the results of observation in a considerable number of cases of sympathetic ophthalmia, sympathetic irritation, and incidentally of severe traumatism. My notes cover over 300 cases of traumatism, involving one or more of the tunics of the eye, excluding all cases of superficial injury, and foreign bodies failing to penetrate; from these I have gathered 35 cases, in which injury or disease of one eye has been followed by loss of the other, and in which the lesion of the first eye could rationally be supposed to have a causative relation to the destructive disease of the other. Also, 36 cases in which enucleation was performed during sympathetic irritation or sympathetic ophthalmia. Also notes of 67 additional preventive enucleations, among which were 5 cases in which trouble followed in the other eye. There were 12 cases of enucleation made during panophthalmitis included in the above 67. All of the cases were under observation, at some time during their course, and all but 6 of the enucleations were made by myself.

I shall only attempt to analyze these cases in reference to points of practical importance, and must necessarily omit much that would be of interest, especially the results of macroscopic and microscopic examination of enucleated eyes, which has been made in nearly every instance of enucleation during sympathetic ophthalmia or sympathetic irritation.

Of the 35 cases in which sight was totally lost by sympathetic disease, 25 were males and 10 females. Disease caused 6 cases, 3 males and 3 females, the right eye being primarily affected in 3 cases, the left in 3. Of the cases following traumatism, 29 in number, 22 were males and 7 females; in 17 the right eye was primarily affected, in 12 the left. This is in correspondence with the generally recognized fact that males are more exposed to traumatism than females. The right eye was the injured one in over 58 per cent. of cases, and in general I have found that the right eye suffers more frequently from traumatisms than the left.

The time elapsing from injury or loss of one eye by disease, to the occurrence of sympathetic ophthalmia or sympathetic irritation in its fellow, was noted with a reasonable approach to accuracy in 65 cases. Of those that are classed as sympathetic ophthalmia, nearly all, probably, had a precedent stage of irritation, but in many the time of occurrence of this could not be ascertained, and the best obtainable data of manifestation of inflammation or failure of vision was used.

22 manifested trouble in the second eye in less than a month from the time of injury or loss of vision of one eye by disease (disease playing a small part in these cases); of these 11 developed sympathetic ophthalmia; between 1 and 3 months 7 cases were noted, 4 of whom had sympathetic ophthalmia; between 3 months and 1 year 3 cases, 2 being cases of sympathetic ophthalmia; after 1 year 33 cases, 16 being cases of sympathetic ophthalmia.

Weakening of accommodation, intolerance of light, and even hyperæmia of the conjunctival and episcleral vessels, so frequently follows in one eye serious injury of its fellow, that during the first two or three weeks after injury it is often difficult to determine whether sympathetic irritation, in its accepted sense, be present or not. I have, however, included only those cases in which relief of pain and irritability of the injured eye was not followed by relief of the irritation of the other.

The shortest time I have noted to elapse between injury and well-marked sympathetic ophthalmia was 2 weeks, the longest time 40 years. I must, however, confess to some doubt as to the sympathetic nature of 3 cases in which vision began to fail from 20 to 40 years after injury, and in whom there existed no posterior synechiæ.

Out of the 35 cases in which vision was lost in both eyes, most of them seen from 1 to 15 years after blindness ensued, the condition of the eye which had been destroyed by sympathetic ophthalmia was as follows: In 20 posterior synechiæ, usually complete constituting exclusion of the pupil, were noted; in

2 the globe was atrophic; in 1 absolute glaucoma was the apparent result of traumatism of the other eye; in 1 the results of neuro-retinitis were visible; in 3 staphyloma of the ciliary region existed; and in the remainder an opaque cornea, usually vascularized, forbid inspection. In reference to sympathetic neuro-retinitis I have notes of 5 cases that might be considered sympathetic in their origin; in only 1, however, was the blindness so great as to prevent counting fingers.

Sympathetic ophthalmia, following enucleation, I have encountered 5 times.

Case 1.—J. F., male, when seen æt. 17; injured at 16 by explosion of gun; both eyes injured, the right hopelessly, the left eye retaining useful vision. After 4 weeks, while very painful, the right eye was enucleated, later the left failed very rapidly. Examination showed exclusion of pupil, opaque lens, and bare perception of light. The only mark of traumatism was a small cicatrix near the lower margin of the cornea.

Case 2.—W. H., male, æt. 10 years; had had purulent conjunctivitis in the first year of life, resulting in serious lesion of left eye, which was enucleated, he says, when he was quite small. At present the right eye shows occlusion of pupil; bare perception of light; no other lesion discoverable.

Case 3.—E. F. G., male, æt. 9. Two weeks before he was first seen, he had received a wound from a knife, penetrating the sclerotic, on the inner side of the right eye, involving the posterior part of the ciliary body; for several days he had severe pain, which his physician sought to relieve by the application of bread and milk poultices. When seen, the anterior chamber was filled with pus, the conjunctiva was œdematous, and the general appearance indicated panophthalmitis. Beyond slight intolerance of light there was no indication of sympathetic irritation. The eye was enucleated, the wound healed kindly, and he was allowed to return to his home in a week. About one week later I received a letter from his father, stating that he had had severe pain, lasting an hour, over his left eye, and that since that his eye was watering. Fearing danger, I telegraphed his father to come at once, and 3 days after the brief attack of pain I saw him. The iris was then unyieldingly adherent to the lens, and pushed forward into the anterior chamber in the characteristic manner; from this time the case progressed without interruption to atrophy of the globe.

Case 4.—F. W., male, seen at 60 years of age; the left eye was injured at 53. While the eye was inflamed and painful it was enucleated; shortly after the right eye began to fail. When first seen the right eye presented chronic conjunctivitis, vascular pannus slight, anterior chamber shallow, complete posterior synechiæ, opaque lens, quantitative perception of light. Vision = $\frac{1}{1\frac{1}{0}}$ was obtained by extensive iridectomy, including all the adhesions, and extraction of the lens.

Case 5.—R. Y., female, æt. 53, when first seen had suffered from iritis of left eye, and had nearly complete posterior synechiæ, pupil occluded. Iridectomy failed to improve vision; iritis frequently recurred; no view of fundus was ever obtained. The right eye was normal. The recurrence of iritis ceased, and after 2 months she returned home. Warned of the danger to the other eye, and of the advisability of enucleation, during my absence from home 2 months later she visited, at my request, Dr. H. B. Young, at Burlington, Iowa, who enucleated the eye; 2 months later I saw her and found that she was very much impressed with the idea that she was about to lose her other eye. I found, however, vision normal, accommodation well performed, and not the slightest indication of trouble. I reassured her, as strongly as possible, of safety, and she returned home; 9 months later she returned, with parenchymatous keratitis, increased tension, and several synechiæ. From this time the case went rapidly down, exclusion of pupil being followed by infiltration of the cornea with opaque material, and I have since heard ultimate atrophy of globe.

In 4 of the 5 cases it is strongly probable that suppurative inflammation of the uveal tract existed at the time of enucleation. The former opinion, that suppurative inflammations of the interior of the globe diminished, if they did not entirely remove, the danger of sympathetic ophthalmia, has been recognized as erroneous, and at the last meeting of this Association, the majority of this Section apparently coincided in the opinion that enucleation was indicated during panophthalmitis, not only for the purpose of preventing sympathetic ophthalmia, but to preserve the patient from the suffering incident to prolonged suppuration. The opinion was expressed that the risks attending enucleation during panophthalmitis were but little, if any greater than those attending enucleation under other circumstances.

While Mauthner confesses that he still stands in awe of von Graefe's advice never to operate if the panophthalmitis be distinctly pronounced, yet he evidently believes that the risk has been greatly exaggerated by the experience and advice of von Graefe. My observation leads to the belief that not only *fatal* results following enucleation during flagrant panophthalmitis are more frequent than our literature would indicate, but that prophylactic enucleation under such circumstances should be avoided for an additional reason, namely: that during the activity of panophthalmitic inflammation, enucleation does not possess the prophylactic influence which we recognize as the paramount reason for removal of an eye.

In reference to mortality following enucleation, there have been 2 cases within my immediate knowledge, both of whom at the time of operation had panophthalmitis; one case I reported in the *American Journal of Ophthalmology* (Vol. III., p. 141), the other case occurred but a few weeks ago in a town near by, the particulars of which I have been unable to obtain as yet. It seems to me that the occurrence of greater fatality, when enucleation is made during panophthalmitis, and the additional probability suggested by the foregoing, that sympathetic ophthalmia follows enucleation during panophthalmitis much more frequently than it follows enucleation during all other pathological conditions, warrants postponing the operation, at least until

sympathetic irritation makes its appearance; then when the patient has all to gain, he can afford to stake his life against total blindness. Sympathetic ophthalmia so rarely follows injuries of the cornea and anterior synechiæ that I am led to believe that the operation of iridodesis has fallen into undeserved neglect.

The first and most important consideration in the management of patients in whom conditions liable to lead to sympathetic ophthalmia exist, is the means of preventing its occurrence. It is unnecessary to go over the ground so ably traversed by Mauthner in his work upon "Sympathetic Diseases of the Eye." Excepting the small proportion of cases where foreign bodies can be successfully removed from the eye, and those cases where marginal iritic incarcerations can be released, the only preventive measure which, up to the present time, has demonstrated its value, is enucleation, and the question arises, When should preventive enucleation be resorted to? Mauthner, who is generally very clear upon this point, fails to give the lesion or lesions which, in his judgment, warrant preventive enucleation; and I believe interrogation of the lesion is essential to a rational conclusion.

It is our duty to seek for the course, which will give the greatest amount of benefit to the largest possible proportion of patients. If a certain procedure saved 50 per cent. of the patients with a certain lesion from total blindness, but was accompanied with a mortality of 2 per cent. ought it not to be adopted? This is a matter which we of course present to our patients for their consideration, but when our patients in turn leave the decision with us, we must accept the responsibility and act upon our best information.

We must recognize that sympathetic ophthalmia does not, of necessity, follow any particular kind of injury; that a man may go through life with an eye rendered blind by invasion of a foreign body, or that the ciliary region may be punctured by an osage thorn, and an atrophic globe ensue, without the other eye suffering in the least; but we know that in 100 of such cases, uninterfered with, many would be found blind at the end of 12 years. On the other hand punctures of the cornea, incarcerations of the iris in the cornea, traumatisms of the lens, or wounds of the sclera near the equator, while always carrying an element of danger with them, are not followed in any very great proportion of cases with lesion of the other eye. Therefore, I believe the first indication for preventive enucleation is the presence of an inaccessible foreign body within the eye, or severe injury of the ciliary region of the globe, and that this indication exists, even if there be retained, to use Mauthner's language, "*a certain amount of vision*," and with me the "*certain amount*" would be *considerable*, if the patient had a piece of gun-cap within his eye; fortunately, however, for us and our patients too, useful vision rarely remains in the injured eye after injuries of this kind. My belief in this position is rendered stronger by *Case 9*, related below, in which sympathetic iritis occurred without warning, and within 24 hours of careful examination.

While the above applies to the condition immediately following the accident, I should regard the subsequent occurrence of panophthalmitis as a contra-indication to preventive enucleation, for the reasons given above. So far as the other class of cases, where serious disease or injury exists, not involving the ciliary region, at least primarily, Mauthner's rule, which he makes, includes all dangerous cases, seems particularly applicable; he says: "My rule in such cases is as follows: If the patient is moderately intelligent, has good surroundings at his home, and can at any moment summon the counsel of a skilful oculist, preventive enucleation is not necessary." Unfortunately this rule in the United States covers only a small proportion of the cases, and is it not best then, in those cases where such surroundings are impossible, to always advise the removal of a hopelessly useless eye?

The diagnosis of sympathetic irritation, using the term technically, referring to a condition threatening the occurrence of sympathetic ophthalmia, and marked by weakened accommodation, lachrymation, photophobia, etc., is rendered difficult by the fact that the symptoms mentioned frequently follow trivial injuries, and may be developed in one eye by straining the accommodation of the other. Within the last two weeks I have seen four cases in which the determination whether the condition was the precursor of sympathetic ophthalmia, or was innocent of any dangerous significance, was very difficult. In former times, I excluded all cases in which the redness, lachrymation, etc., of the second eye disappeared upon the use of atropine to the injured or diseased eye; latterly, I have made use of cocaine in the same way. With this elimination, which makes, perhaps too arbitrary a boundary between safety and conditions belonging to so protean a malady as sympathetic disease, the remaining cases can be looked upon as of the utmost gravity, and enucleation advised without hesitation in the most urgent manner; indeed my rule is, where enucleation is refused under such circumstances, to decline further responsibility in the case. In the presence of sympathetic irritation, a moderate amount of vision in the first eye should be no bar to the effort to preserve the second. Much has been written concerning the possibility of the injured or diseased eye, preserving greater usefulness of vision than the sympathizing one; my notes furnish 2 cases of doubtful value.

Case 6.—J. R. R., male, æt. 47; received a contusion of left eye several years previous, slight posterior synechiæ resulting; about a year later iritis of right eye followed, resulting in extensive adhesions; right eye, S.=$\frac{1}{100}$; left eye, S.=$\frac{1}{2}\frac{1}{0}$.

Case 7.—M. C., male, æt. 35; contusion of right eye at 27, followed by failure of vision in the other eye recently; atrophic disk of left eye. Condition of vision, right eye, S.=$\frac{1}{2}\frac{1}{0}$; left eye, S.=$\frac{1}{100}$.

During sympathetic serous iritis and sympathetic plastic iritis, Mauthner advises strongly against enucleation. I have, however, enucleated in the early stages of both with good results.

Case 8.—S. W., female, æt. 30; at 13 received an

injury, involving cornea and ciliary region of right eye; at the time of observation the right eye was totally blind, the left with serous iritis, S.=$\frac{20}{100}$; the right eye was enucleated, and soon after the left became still worse; a week later the nerve was resected and improvement began at once; at the end of four weeks the left eye had regained normal acuteness of vision.

Case 9.—E. W., male, æt. 58; while sawing wood slipped, and in falling brought his hand violently in contact with his right eye; when seen a few minutes later no external lesion was found; the anterior chamber was filled with blood; the margin of the iris was detached in the upper and outer quadrant; midway between the cornea and equator there was an apparent subconjunctival laceration, subsequently shown to be rupture of the sclerotic, ecchymosis of all parts in the vicinity of the globe. No great amount of inflammatory disturbance ever appeared, the pain was inconsiderable, and with absorption of blood vision improved, and although no view of the interior could be obtained, in seven weeks the vision had increased so that he counted fingers at 6 feet. Without any warning, between 10 A.M. of one day and 9 A.M. of the following day, sympathetic plastic iritis appeared, he stating that he noticed slight discomfort of the left eye upon arising, and thought he could not see as well; examination showed posterior synechiæ and the presence of flocculent lymph in the aqueous. As might be expected, in so recent plastic iritis, the points of attachment yielded to atropine instillations, the pupil dilating irregularly; enucleation was made at once, and the patient sent to bed; the iritis proved very persistent, but eventually yielded, the patient visiting the office 4 weeks after the enucleation, for the first time; S.=$\frac{1}{15}$. Three years later I found slight pericorneal injection, iris freely movable, and vision the same.

I think, however, that where plastic iritis has existed several days, and especially if atropine fails to loosen the adhesions, there is nothing to gain by enucleation during the active stage; but if, upon subsidence of the inflammation, there remains an apparently good opportunity to secure vision in the sympathetically affected eye, I believe it is best to enucleate before making an iridectomy.

I have encountered but 3 cases in which I have made certain, that the sympathetic inflammation had been confined to the iris (or to the iris and cornea); in all of them a fair amount of vision was obtained by iridectomy following enucleation.

There is a suggestive scarcity of literature upon the subject of treatment of sympathetic ophthalmia after its full development. When the sympathetic inflammation is limited to the iris, serous or plastic iritis, there is still probability of affording relief; but when irido-cyclitis or irido-choroiditis occurs sympathetically, there is but little for the surgeon to do. I have not referred to the operation of cutting the ciliary nerve or the optic nerve posteriorly, or to evisceration of the globe, with or without the implantation of an artificial vitreous. I have had no personal experience with either of them, and from reports of the first, and observation of the last, I have not been favorably impressed with them.

In so serious a matter as the effort to preserve one eye after its fellow is functionless, or is likely to become so, considerations of personal appearance are of secondary importance, safety of vision being the object sought for, at every sacrifice but that of life; and I believe that patients have the right, if they so desire, to risk life for the preservation of vision. The total loss of vision is but little less serious than the loss of life, and the same rules as to efforts to preserve vision apply, as are foremost in the mind of the surgeon who operates to save life. The surgeon selects in amputation the point which will give to his patient the greatest possible opportunity for life; we select in the cases threatened with sympathetic ophthalmia the operation which experience has shown will give the greatest opportunity for vision.

DENTAL LESIONS CAUSING FACIAL NEURALGIA AND OTHER NEURAL PHENOMENA.

Read in the Section on Dental and Oral Surgery, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY ARTHUR B. FREEMAN, M.D., D.D.S.,
OF CHICAGO, ILL.

When invited by the Secretary of this Section of your Association to prepare a paper to read before so intelligent a body of scientific men, representing the two noblest professions to which men have ever devoted time, toil or study, I instinctively shrank from the duty imposed with the conviction that there were many older and more experienced men in the profession who could present subjects of far greater interest than I; but your Secretary persisted and I reluctantly consented to prepare a paper on the above named subject. While casting about for a topic on which to write, this subject was suggested to my mind, not because of anything of an original character which I had to present, but by a little episode to which I was compelled to listen while at dinner, and which may not be wholly out of place if related at this time.

On the above occasion I was "given a severe pain"—not neuralgic in character, however—by a female fanatic on the subject of metaphysics, who detailed in minutiæ a most extraordinary cure by her metaphysician of a very dangerous attack of facial neuralgia, which had signally baffled the skill of several of the "Eddy Faith School" and other way-up Christian scientists, and this wonderful man had only to convince his patient that the pain was in her mind and it was gone forever. As detailed by her, an educated dental practitioner of to-day would not require a very active imagination to diagnose this as the old, old story of pulpitis of three or four weeks' duration; the pulp, after a lingering death, had finally expired, to be almost immediately succeeded by suppuration, pericementitis, and the accompanying pain and œdema, of perhaps unusual severity. Fortunately for this latest metaphysical ass in attendance,

the pus had formed and the abscess had pointed when he was called to this case, of a class in which he had never been foiled.

Who can wonder that two back-to-back consultations with such a miraculous man was enough to cause this abscess, or any other, for that matter, to discharge itself freely? The reparative efforts of nature here wrought a tedious cure and an imposter secured glory alone due to her. As I listened I thought how much more pain-saving and scientific it would have been for a general or dental practitioner to have introduced an appropriate devitalizing application in the early stage of this neuralgic affection and in twenty or thirty minutes' time have saved this poor foolish mortal three or four weeks of excruciating agony.

The great number and endless variety of facial neuralgic manifestations have perhaps tortured more people, attracted the attention and baffled the skill of more practitioners of medicine, and luxuriantly supported more quacks, than any other one disease, and they have not, except in isolated cases, wrought more than a temporary relief. Why? Because they have not found the cause and then removed it.

What is known in medical literature of this pain-demon which constantly or periodically mars the comfort of so many thousands of cowardly, and some hopeless, human beings, and causes the simple endurance of this vast amount of suffering, which saps vitality, wears out the strongest frames and causes disease in those who otherwise might enjoy a life reasonably exempt from ill health? I am compelled to answer, nothing. What space is accorded to the subject in the several treatises on the practice of medicine which I have consulted is devoted to the acknowledgement of the ignorance of the subject as regards lesions of the teeth, and a few glimmering generalities on etiology and non-lesion in the affected nerve trunk, etc. Indeed, one eminent writer on "Practice" goes so far as to record the following brilliant assertion: "Caries of the teeth is an occasional cause of tri-facial neuralgia, but it is by no means frequently referable to this cause." He evidently takes it for granted that "caries" is the only ill which a tooth is heir to.

So far as I have been able to discover, and I have examined the literature somewhat carefully, I have found only one writer who has accorded to dental lesions, as a causative agency of facial neuralgia, that place which it deserves, and I think even he was too modest in his assertion of their influence.

It is with the desire to add something to the literature of the subject, and also with the hope that, if many medical practitioners do not listen to what I may present, some seed may at least fall on fertile soil—as I am confident it will—and bring forth its fruit, and also a sensibility to the sufferings of our patients and the thousands who are not our patients, but the dupes of quacks and nostrums, that I am persuaded to cope with this subject.

With these preliminary sentences I will enter more or less minutely into the discussion of Tic Douloreux, and the principal lesions of the teeth which may provoke it, and at the same time introduce well authenticated examples from daily practice by way of illustration of some of the neural phenomena resulting.

To quote a current definition of the term neuralgia, it is a disease the chief symptom of which is very acute pain, exacerbating or remitting, which follows the course of a nervous trunk, extends to its ramifications and seems, therefore, to be seated in the nerve. I shall take the ground, notwithstanding the arguments pro and con, that neuralgia is a phenomenon rather than of itself a distinct disease—simply the expression of an acute or remote lesion. The derivation of the word itself is from two Greek roots, *νεῦρον* (neuros), meaning nerve, and *ἄλγος* (algos), meaning pain; thus its simplicity of meaning is pain in a nerve. Any pain, therefore, may very properly be called neuralgia, and to a great extent is by the masses, unless of such acute character and so localized that it cannot by any possibility be mistaken for a toothache, toeache, headache or backache.

It is in this general sense that I shall employ the term in this paper, as it is in this general sense that the term is used by the medical profession as well as by the laity. It is a poor philosophy, indeed, to reason that any effect is produced without a cause. If neuralgia is a disease, what is its lesion? If it is simply a phenomenon, then what are the most frequent causes of its expression? I believe that in at least nine out of ten of all facial neuralgias the sole and only cause is in, and associated with, the teeth.

Doubtless the members of this Association will agree that the conditions known as anæmia, debility, syphilis and miasma are predisposing causes, and I think they will also agree with me that the *prima facie* cause lies nearer the pulp-chamber of the tooth and has a more tangible union with the trifacial nerve than have these general conditions.

The lesions of the teeth may be divided into two classes: pulp lesions, or those arising from irritation within the teeth themselves; and pericemental lesions, or those manifesting themselves from irritation outside the apical foramen.

Mentioning these pathological conditions in the order of their minimum importance, as they occur to me; first, noticing the pulp lesions, we have sensitive dentine as sometimes noticed in superficial and simple caries. Irritation from this condition occurs most frequently in patients of low grade temperament with a predominance of the nervous basis and asthenic constitutions. The symptoms may range from uneasy sensations, which may be located about the teeth, jaws, cheeks, eyes, nose, etc., to positive neuralgic pain or paralysis, and are usually aggravated by contact with sweets and sours and rendered intense by the simple touch of an instrument.

Secondly.— Deep-seated caries may or may not cause pulp irritation as above described, in proportion to nearness of proximity of the dissolution of calcific salts to the pulp itself, while the symptoms most to be relied upon are increased pain on contact with extreme thermal irritants, and cessation or remission on application of pain obtunding remedy.

Thirdly.—Complicated caries, including all cases of almost or complete exposure of the pulp, dying pulps from too near proximity of metal fillings or other predisposing causes. This is perhaps the most fertile of all the lesions, and at the same time most easily diagnosed and treated.

The symptoms may be paroxysmal and remittent, intermittent or constant pain; not always positively located; very severe during paroxysms, throbbing or jumping and usually increased at night.

Fourthly.—Calcific formations within the pulp-chambers, which are all pathological conditions, sometimes giving rise to types of neuralgia difficult in diagnosis and obstinate in treatment.

These conditions are usually found in patients of sthenic constitution, and as classified and defined by Prof. G. V. Black in the "American System of Dentistry," are six in number and as follows:

1. Secondary Dentine.—A new growth of dentine more or less regular in formation, excited by abrasion, decay or other injury by which the nerve fibrils are subjected to irritation at their distal ends.

2. Dentinal Tumor within the Pulp-Chambers.—An erratic growth of dentine into the pulp-chamber united to the wall by a pedicle, the structure usually being very irregular.

3. Nodular Calcifications among the Tissues of the Pulp.—These are smooth or nodulated stony masses of dentinal tissue deposited among the pulp tissues as a result, probably, of irritation.

4. Interstitial Calcification of the Tissues of the Pulp,—which is the counterpart of calcifications elsewhere in the body.

5. Cylindrical Calcifications of the Pulp.—This form occurs infrequently, and always in the root canals, the tissues of which are probably in a state of fibrous degeneration.

6. Osteo-Dentine.—An erratic formation showing both lacunæ of bone and dentinal tubes.

The lesions of this classification are somewhat similar in the manifestation of symptoms; by no means always producing neuralgic trouble, though pain from secondary dentine impinging on the peripheral termination of the nerve fibrillæ of the pulp, causing its pressure and recession, and chronic irritation from pulp nodules and erratic growths, is not of unfrequent occurrence.

Fifthly.—Abrasion of the teeth, either mechanical or chemical, is not an occult but frequent cause of distressing and prolonged neuralgic pain. The wearing down of the crowns of the teeth from attrition or otherwise, causing irritation, congestion, pressure on nerves and consequent reflex pain.

As has been said, any and all of the above pathological conditions, as well as many others connected with the teeth, may cause hyperæmia of the pulp, predisposition to its death and all possible variety in neuralgic phenomena.

Among the most frequent and painful of the second class, or pericemental lesions, we have:

1. Pericementitis.—This is usually an acute inflammation caused by irritation of the pericemental membranes by mephitic gases escaping from the pulp-chamber through the apical foramen, resulting from putrescent pulp.

The symptoms are usually decided soreness, acute throbbing pain beating with the circulation, violent suffering upon concussion of tooth, obliterated health line, dull heavy pain diffused over the entire side of face, neck and head, also a peculiar bluish appearance of tooth on comparison with adjacent ones, and lack of pain on thermal change.

In many instances the escape of mephitic gas is slow, the irritation of pericementum correspondingly chronic, in which condition pain of a reflex character is frequent and severe, and has been observed to extend over a period of many years.

2. Exostosis-dentium.—A bony enlargement of the roots of teeth caused by slight and continued peridental irritation, exciting deposition of salts at the point of irritation.

The varieties may be nodular, circumscribed or apical or diffused, and while the condition is not always accompanied by pain, very many complicated cases arise in practice.

3. Absorption of Permanent Roots.—A pathological condition analogous to absorption of other hard structures which, leaving the end of the root rough, spiculated and uneven, almost universally causes irritation resulting in severe reflex manifestations.

4. Retention of diseased roots.

5. Pyorrhœa Alveolaris and accretions of salivary calculous impinging on the gingival border.

6. Mal-eruption of and Impaction of the Wisdom Teeth.

7. Diseased Antrum arising out of the foregoing or other causes.

I am confident every dental practitioner before me can cite from his own practice case after case of facial neuralgia of severe type as an effect produced, illustrating each of the above distinct lesions as the cause.

In connection with the close of this paper I wish to call your attention to some of the other very interesting neural phenomena which may be caused by dental lesions, through inosculation of the nerve-branches and reflex action, and perhaps I cannot do this in a more interesting way than to briefly relate the histories of a few cases from practice as related by those who have observed them.

First: A case copied from the June number (Items of Interest) of the *Dental Independent*, and taken by that journal from the *London Dental Review*. The patient had suffered fourteen years with dreadful pain in the eye, accompanied by a continual flow of tears and intolerance of light. A diseased tooth was extracted from the upper jaw on the same side on which the painful eye was situated, when the the eye was speedily restored to health.

Second: An unusually interesting case of paralysis of an arm from reflex odontalgia through inosculation of the trifacial nerve and brachial plexus, as related to the students of the Philadelphia Dental College by Prof. J. Foster Flagg. A Western Judge (from Arizona, I think), had suffered with paralysis of an arm for some months before going to Philadelphia for medical treatment, which he had received there for a space of three months, without success, when he incidentally called on Dr. Flagg for dental

services. Had experienced no pain in teeth, but on examination complicated caries was found on distal surface of a lower left bicuspid. On probing same there was decided arm response, *i. e.*, pain, numbness, etc., in fingers and hand. The pulp was sedated and devitalized, and immediately arm recuperated, and in something like a week the paralysis was completely cured.

Third: Another case related by Prof. Flagg, of intermittent paralysis of the muscles of deglutition caused by general dental irritation from sensitive dentine and vitiated oral fluids. Patient was a young lady some 28 or 30 years of age, who was at times afflicted with paralysis of deglutory muscles, intense paroxysms of pain, usually excited when sensitive dentine was irritated by pressure of foods or the tongue, and also brought on in all their intensity by the touch of an instrument, when the agony of expression of the countenance and drooling of saliva were pitiful. The introduction of ½ dozen amalgam fillings wrought a complete cure.

Fourth: A case of severe ocular pain occurring in the practice of my preceptor, Dr. Daniel B. Freeman, of this city, some years since. The patient had suffered from a painful eye and been under the treatment of an oculist for six months without improvement. While waiting for the arrival of the physician one day he complained of terrific supraorbital pain, and entreated that something be done for his relief, and in compliance tr. of aconite was applied over supraorbital foramen, when instantly the pain flew as if by magic to a partially covered root of a tooth on the same side of face. The root was extracted, found to be exostosed, and the pain in the eye never returned.

Finally: A case of diffused facial neuralgia from abrasion, secondary dentine and exostosis. Patient 50 years of age, sthenic constitution, had suffered from neuralgia for a year and a half or two years; four roots were present and the balance of the teeth in the upper jaw much abraded from attrition. The roots were extracted and found exostosed. Pain still continued and finally, at two or three sittings, the abraded teeth were all extracted, and no further trouble has been experienced.

I would not have you understand me to say that all suffering is caused by tooth lesions, neither do I assert that all pains and aches traceable to the teeth for their cause, rightfully or technically come under the head of neuralgia. I do claim that very many more of them than is suspected are occasioned by these lesions. To the end of time we will all doubtless be frequently brought face to face, in our efforts to diagnose obscure cases, with a black, impenetrable wall, so high and broad that we cannot see over or around, so thick that no ray of light will shine through. This must necessarily be the case, but to find the cause and remove it should be our highest and chief aim; failing in this, we can do no less than our predecessors have done—treat facial neuralgia on the sedative plan.

PUERPERAL TETANUS.

Read before the Medical Society of the District of Columbia, May 18, 1887.

BY C. V. BOARMAN, M.D.,
OF WASHINGTON, D. C.

I was summoned in haste to see Mrs. T., in her second confinement, March 16, 1886, at 8:30 A.M. The messenger stated that there appeared to be serious trouble, as she had been in labor since the preceding evening, a midwife being in charge. I at once went to the assistance of the woman, and found her suffering acutely and anxious for aid. Upon making an examination, my hand encountered the child's hand and arm (the former lying in the vulva); the os uteri was so firmly contracted around the child's shoulder that it was impossible for me to force my hand beyond it, nor could I dilate it, although I worked assiduously for over an hour. The womb was in a constant state of action, brought about by numerous doses of fl. extract of ergot, administered by the midwife in charge the preceding night, an ignorant old woman. Seeing that it would be impossible for me to accomplish podalic version alone, I asked for and obtained consultation. Dr. A. McWilliams having been called, he made several ineffectual attempts to introduce his hand into the uterus.

Concluding that it would be impossible to either turn the child or convert it into a head presentation, we then called the husband and laid before him and the wife the two operations, Cæsarean section and embryotomy; they would not allow the former, but willingly gave their consent to the latter, the child having been dead some time.

Having administered ether to the patient and produced full anæsthesia, I again attempted to introduce my hand into the uterus, but could not overcome the rigid contraction of the os uteri, which hugged the child's shoulder so tightly that I could not even insinuate the end of my finger between it and the child; Dr. McWilliams also made an attempt to do so but failed.

Seeing the absolute impossibility of delivering the child, we at once, with the assistance of Dr. Briscoe, proceeded to perform embryotomy. After working for over two hours we succeeded in removing the child, which was far advanced in decomposition. After delivering the placenta the womb contracted nicely, the woman reacted from the anæsthetic, and appeared to be quite comfortable.

March 17.—Mrs. T. was very cheerful and doing well; asked for food, and said she had passed a good night. Lochia normal and satisfactory. I again saw her late in the evening, and found her restless and complaining; slight febrile reaction; quick pulse; and some abdominal tenderness.

The mother of the patient requested me to see a man in the next room, stating that he had been sick for some time with erysipelas, and that he had a large abscess developing beneath his right ear. I declined after giving my reasons for so doing, and ordered his immediate removal to a hospital if possible. That being out of the question he was carried to a distant part of the house and the room well aired and fumigated;

it was separated from the lying-in chamber by a board partition only, a very dangerous neighbor for a woman in confinement.

March 18.—We met quite early and found our patient suffering with a well-marked case of puerperal fever, which ran its course in a few days, and convalescence had begun to establish itself, when, upon making my evening call March 23, I found Mrs. T. complaining of a stiffness of the jaws and an inability to open her mouth sufficiently to take nourishment. She had great pain in the back of her neck, and there was also considerable muscular rigidity; the peculiar *risus sardonicus* was present. I at once concluded that we had a case of tetanus to contend with, but the woman being of a highly neurotic type, subject to hysterical manifestations, and having always been treated as a spoiled child, I hoped that it would turn out to be transitory.

March 24.—As indicated by the symptoms of the preceding evening, Mrs. T.'s was a well-marked case of tetanus, the jaws locked, intense pain the back of the neck, and a rigid contraction of the longitudinal muscles; they were in a state of tonic rigidity; opisthotonos was constant and well-marked; the mind perfectly clear; pulse frequent and small; temperature increased (but having misplaced my chart I cannot give its exact height); speech and deglutition difficult and painful. The abdominal muscles were alternately rigid and relaxed and respiration painful. The spasms recurred with great frequency till death put an end to her sufferings on the morning of March 25. No post-mortem examination was allowed.

The case just reported was certainly a most formidable one. The womb through necessity was subjected to considerable handling, and to the introduction of instruments into it, as the delivery was a most tedious process and the child removed in pieces, as its limbs were so softened by decomposition that they would stand but little traction without separating; besides, the mother had been freely dosed with ergot by the incompetent midwife the preceding night, causing the uterus to be in a state of rigid contraction.

Gallabin[1] states that puerperal tetanus is very rare and that no instance of it occurred in 46,089 deliveries in Guy's Hospital Lying-in Charity, and that he had only met with one case.

My patient had every attention; no exposure to cold; absolute cleanliness; was well washed and syringed *per vaginam*, with warm, carbolized water, and also bi-chloride of mercury solution, and even the interior of the womb received attention.

Puerperal tetanus resembles surgical tetanus in that it arises from some irritation connected with the local traumatic condition in the uterus or vagina. No doubt this had considerable to do with the production of tetanus in my case. Dr. Robert Reid[2] states that injuries of the internal organs do not appear to have much tendency to produce tetanus, which appears to be the case, as the uterus is subjected to more rough handling, scraping with curetts, lacerated and torn during labor, by its process and instruments in the hands of physicians and others. Yet the patients make good recoveries, and it is a rare occurrence for tetanus to follow the above injuries, although it is occasionally caused by a small piece of placenta, left in the womb, as was the case in a patient of Dr. Banga's; but his followed an abortion.

Upon looking into the literature of tetanus following gestation at full term, I find many causes described. Garrigues,[3] who has looked into the subject with great care, succeeded in collecting 32 cases, which he has tabulated, giving their supposed cause, mortality and treatment. According to his table there were only 3 recoveries. Those following abortion were 25, with 2 recoveries. In the majority of the cases there existed complications at the time of the confinement, such as forceps delivery, retained placenta, ruptured perinei and hour-glass contractions, necessitating dilatation for the purpose of placental delivery and hæmmorrhage.

Under the heading "Puerperal State and its Complications," in the catalogue of the Army Medical Library, puerperal tetanus is of rare occurrence. After a careful search I succeeded in finding a few very interesting cases which I will take the liberty of reciting in part as they are of great interest, giving their supposed cause where possible.

Case 1.—Reported by Quinton Gidbon;[4] was that of a woman æt. 32 years, primapara, labor tedious, pains so distressing that he administered chloroform for their relief from time to time. At noon the head being well down in the lower strait, and the pains having abated, he delivered with forceps; the placenta being retained by an hour-glass contraction, he was compelled to introduce his hand and deliver it. The patient complained constantly during her labor of inward heat and thirst, which continued after delivery; in 48 hours these symptoms abated, and she recovered so rapidly during the following 3 days as to be considered convalescent. On the morning of the 12th she complained of slight stiffness and pain in the muscles of the neck and lower jaw, with difficulty in swallowing; all the symptoms pathognomic of tetanus followed, and she died in 60 hours after their first appearance. Gidbon stated that the above case was his first one in a practice of 40 years. Was this traumatic tetanus brought about by injury done the parts by forceps or hand?

Case 2.—Reported by Dr. R. C. Bennington;[5] was that of a woman æt. 30, secundipara; was delivered with forceps after great trouble; perineum was torn; child still-born. She died in 24 hours after the first symptoms became apparent, of tetanus, which took place on the seventh day after confinement Here we also have a traumatism.

Case 3.—Reported by Dr. McDonald.[6] A secundipara; her delivery was natural and easy, and of only a few hours' duration. March 9 first symptoms of tetanus became apparent, spasms of an opisthot-

[1] Manual of Midwifery. 1886.
[2] Nature and Treatment of Tetanus. Robert Reid, M.D.
[3] Garrigues, H. J., Obstetrical Tetanus and Tetanoid Contractions 1882.
[4] Trans. Medical Society of New Jersey. 1878.
[5] British Medical Journal, London. 1886.
[6] Transactions Obst. Soc. Edinburgh, 1874-77, p. 101.

onic character set in, and all other manifest signs indicative of the above disease. The patient died the same day. In this case no traumatic cause existed, the onset of the disease was sudden and its termination very rapid. The post-mortem examination presented some lesions of the brain, which looked as if eclampsia was associated with it.

Case 4.—Another peculiar case without traumatism is that of Dr. John Haddon.[7] The mother of 8 children was confined March 11. Labor slow but normal. Patient did well until the 13th, when a rigor occurred with abdominal tenderness. She appeared better in the evening.

March 14, symptoms of tetanus; otherwise doing well, lochia normal, no abdominal tenderness, but the uterus was large and rather soft as felt through the abdominal walls.

March 17. Tetanic spasms of the jaws and trunk; speechless, but seemed conscious. Upon making a vaginal examination, on the right side of the womb, which was still large and flabby, easily admitting the hand, was discovered some foreign body or substance; it felt in consistency similar to the uterus and seemed incorporated in its walls. Several attempts were made to remove it, but had to desist for fear of injury to the uterine substance.

The patient died of tetanus at 1:30 A.M., March 18. No post-mortem examination was made.

Case 5 was one of forceps delivery reported by Dr. Kuhn,[8] followed by tetanus on the eleventh day after delivery, and death on the thirty-eighth day.

Case 6.—Ehrendorfer[9] reports an interesting case of labor followed by tetanus which recovered. Attempts were made to deliver with forceps, but unsuccessfully. Craniotomy was resorted to and a full term child delivered. On the fourth day after the operation symptoms of tetanus appeared; on the seventeenth day she left the bed, and on the twentieth day she was discharged.

Case 7.—Werner[10] reports a case to which he was called to check hæmorrhage after delivery, a midwife having had prior charge. Tetanus set in on the ninth day, and patient died 6 days later.

Case 8.—Dr. Keeting[11] reports a case attended by considerable hæmorrhage, but the patient reacted nicely and was doing well, when tetanus set in on the eleventh day and she died soon after.

Case 9.—At the Lying-in Hospital, Prague, in the service of Dr. Rubeska, a case of tetanus following a forceps delivery occurred. The patient died. Upon making a post-mortem examination there was found metritis and endometritis. Reported by Dr. W. R. Endres.[12]

Case 10.—Reported by Dr. Ditzel,[13] who was called on account of hæmorrhage after delivery of a living child; found her very anæmic from loss of blood; uterus very high up, flabby and enlarged. April 6, 3 days after, symptoms of parametritis, which apparently grew better till April 12, when tetanus set in and she died, 2½ days after first signs of tetanus, 10 days after delivery.

Puerperal tetanus, although known to the ancients and mentioned by both Aretæus and Archigenes, apparently escaped the notice of our leading obstetrical writers, until Sir James Y. Simpson's attention was drawn to it in 1854. He was the first to write an elaborate article on the subject, giving the record of 28 cases collected by him from various sources. He was followed by an exhaustive treatise on the same subject by Garrigues,[14] to whom I am indebted for much of my information. In 1849 Pitra-Aubinais[15] reported 3 cases.

In America and Europe puerperal tetanus is very rare, even in our Southern States, where we have many negroes and a high temperature, the latter being mentioned as a cause.

In India, Waring[16] states that in 3 years 232 women perished from puerperal tetanus at Bombay. Colored races are more prone to it than white, and hot climates are predisposing elements, particularly during the wet seasons. It is more common in the country than in the city, and very rare in lying-in institutions. Advanced age is frequently a cause, particularly after abortions, as are also first pregnancies, according to Garrigues' table. To show how very rare this disease is Merriam collected 10,150 cases of difficult labor with 106 deaths, and only 1 died of tetanus.

The puerperal state itself is a predisposing cause, particularly in neurotic females, as are also mental excitement, grief, and anxiety. Hæmorrhage, by its debilitating and prostrating influence, is a prominent cause of tetanus.

Suppression of the lochia, or a profuse perspiration, are looked upon by Pitra-Aubinais as unfavorable symptoms and likely to be followed by tetanus.

Throat troubles occasionally precede it; Garrigues mentions 3 cases where this was the case.

Injuries to the womb, vagina and perineum, made either by instruments, or the hand of the operator in turning and the delivery of retained placenta, particularly where hour-glass contractions exist, are exciting causes of tetanus.

The retention of small pieces of the after-birth or its membranes is dangerous, and where no other cause can be found should be carefully looked for.

Carl Schroeder attributes septicæmic influences as causes of lock-jaw in either abortion or gestation at full term. Exposure to cold after confinement has been followed by tetanus.

One great reason why we do not meet with this disease oftener is because the uterus is itself or almost entirely supplied by nerves from the sympathetic system; and, as stated by Curling, tetanus is more easily excited by lesions of parts supplied with nerves from the cerebro-spinal system than by those supplied by the sympathetic system.

[7] Edinburgh Med. Journ., vol. xix, 1873, pp. 34–36.
[8] Wiener med. Blätter, 1881, vol. iv, p. 1599.
[9] Wiener medicinische Wochenschrift, vol. 33, 1883. pp. 5–10.
[10] Med. Correspondenz-Blatt'a, Wurttembarta Landesver, Stuttgart, vol. liv, 1884, p. 213.
[11] British Medical Journal, London, 1883, vol. i.
[12] St. Louis Cour. Med., vol. x. 1883. W. R. Endres, M.D.
[13] Hospital Tiden., Copenhagen, vol. viii, 1881. Ditzel.
[14] Obstetrical Tetanus and Tetanoid Contractions. H. J. Garrigues, 1882.
[15] Revue Médical Chir., vol. v, 1849, pp. 149–159. Pitra-Aubinais.
[16] Indian Annals 56, Br. and For. Medico-Chir. Rev., vol xviii, 1856, p. 431. Waring.

THE USE OF THE DEEP BURIED CONTINUOUS ANIMAL SUTURE IN LAPAROTOMY AND PERINEORRHAPHY.

Read by title in the Section on Obstetrics and Diseases of Women, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY E. W. CUSHING, M.D.,
OF BOSTON, MASS.

In his operation for restoration of the perineum, the lamented Schrœder lately used two or even three layers of continuous catgut suture, superimposed one on the other and running from before backward, and then in the reverse direction, thus building up a perineum before he united the vaginal mucous membrane.

Jenks' operation for ruptured perineum proceeds, as you remember, by splitting the septum between the rectum and the vagina, dissecting it in both ways until the adhesions are freed, and then, by bringing the lateral surfaces together, the incision, previously horizontal, is made vertical. Jenks removes the flap of vaginal tissue thus freed. Dr. Marcy has modified the operation by retaining this flap, uniting its edges in a straight line, continuous with the new perineal raphe. To hold the parts better in apposition he inserts pins in each side, which are united in the vagina and outside of the body by projections with hooks or eyelets on them.

Now, in moderate cases of rupture of the perineum, the buried continuous suture of Schrœder may be adapted to the operation, and I have used it in this manner. Commencing at the very bottom of the wound made by splitting the septum, as already described, one end of a piece of tendon or catgut is attached in the median line, and then the sides are brought together by stitches taken with a large curved needle, each stitch taking up more tissue on alternate sides, until three or four on each side have been inserted, then the stitches are taken deeper so as to reach the ends of the sundered transverse muscles of the perineum, and draw these together. These stitches may be taken deeply with safety, because there are no vessels to be injured except the pudic arteries which lie close under the rami of the pubic bone. The rectum is of course carefully guarded from injury by one or preferably two fingers in it, and the whole operation can be conveniently performed under irrigation with a sublimate solution 1:2000.

Each stitch thus reinforcing the previous one, the continuous suture brings all the tissues into close apposition, leaving no pockets, and I am now content to dispense with the use of pins, as by the above method there is no dragging of the tissues out of their normal position by any bag-string action of threads or wire.

The end of the long continuous suture should be cut off, after securing it, and afterwards buried by bringing together, in the median line, the edges of the vaginal mucous membrane in the usual manner. By thus burying the end of the suture there is less chance of septic matter creeping into the wound at the point of emergence of the catgut.

I am using this method, with excellent results, even in cases where the rupture extends into the rectum. Here the lower edge of the split septum is doubled on itself, and becomes the two edges of the rent in the rectum, to be united from the anterior or raw surface with the finest silk continuous suture.

I turn down the point of the flap of vaginal mucous membrane so that the anterior end of the union of the parts is Y shaped.

In regard to the use of the buried continuous animal suture in laparotomy, it was reported to me some months ago that Prof. Thomas was closing his abdominal incisions in this way, and I have since then used it with great satisfaction. Of course it is easy to see that, if the abdominal incision is made under irrigation down to the peritoneum, although strong antiseptics cannot be used in the abdominal cavity, yet it is very desirable to retreat from the peritoneum, if I may use the expression, with irrigation of the abdominal wound, in order to avoid mural abscess, etc.

Now this is done as follows: the peritoneum is first carefully sewn up with a continuous suture of fine tendon or catgut, and then the sublimate irrigation can be turned freely into the wound. When this is well douched and clean the sheath of the recti muscles is to be carefully united with the same suture, and then the tissues held in apposition in order to prevent accident during vomiting, etc.

Dr. Thomas does this in the following manner, as I observed lately when he kindly explained his method to me during an operation at the Woman's Hospital:

Preluding that after sewing up the peritoneum he is careful, in uniting the muscles, to include the edges of the line of union of the peritoneal incision, in order to avoid pockets, he passes two or three silver wires through the skin and fat down to and slightly into the muscular layer. These silver sutures are tightened and twisted after the skin has been united by the continuous suture.

I have drawn the fat and cellular tissue together without the use of the silver wire, using a curved needle in a manner analogous to that described in speaking of the perineum operation. That is, the curved needle carrying the same suture is entered horizontally first on one side and then on the other, in the wound, not through the skin, thus bringing the fat and connective tissue together, so that the incision in the skin comes almost together, and the wound is effectually guarded against gaping or accidental rupture. The end of this long suture should now be fastened, cut off, and buried. The skin brought together neatly, with another animal suture, and a dressing employed which I think is of great value. That is, the irrigation fluid is carefully dried from the skin with sublimated cotton and the wound painted with a saturated solution of iodoform in flexible collodion, a little absorbent cotton is laid over this and saturated with the iodoform-collodion, so that the wound is hermetically sealed. This dressing, if all goes well, need not be removed or changed. There are no stitches to remove. At the end of some three weeks the piece of iodoform cotton is removed, carrying

with it the bits of catgut which were external to the skin, the rest is all absorbed or organized.

There are one or two points of caution to be observed in the above procedure: the first and most obvious is to avoid wounding the bowel when sewing up the peritoneum, and the best way to avoid this is to lift up the ends of the incision, one by the suture and the other with a blunt hook.

Secondly, not to draw the continuous suture too tight, for it brings the surfaces in apposition everywhere and not at certain points only, and if drawn tight may strangulate the tissues.

Thirdly, particular care is necessary with so long a thread that it may not become soiled or infected during the different parts of the operation. Neglect of either of these points may be fatal.

COCAINE, AND ITS EFFECTS.

BY GEORGE N. MONETTE, M.D.,
OF NEW ORLEANS, LA.

Cocaine has been the vaunted remedial local anæsthetic in all forms of pain and suffering; yet it seems that its use in dentistry cannot be availed indiscriminately. I have been called a number of times, by a neighboring dentist to attend his patrons, to whom he had given cocaine hypodermically, and without anæsthetic influence; *per contra*, a decidedly deleterious effect had been wrought in each person, requiring several hours for its complete counteraction by the use of opiates and stimulants.

The first case to which I was called was that of a young man, single, and a saddler by occupation, by the incidental right of his trade, a strong man, yet under the deleterious influence of cocaine, was completely unnerved. The dentist had inserted the cocaine in the gums. When seen, the patient was bathed in a cold perspiration, his eyes glistening, yet the pupil was not dilated; complaining that he was blind, and that he would die, asking to be held. Pulse was much accelerated, feeble, soft and compressible. In other words, he really acted as if deranged. I gave morphia subcutaneously, and with good effect.

Case 2.—I found a colored woman on the floor in the dentist's office complaining of being dizzy, unable to walk, of being sick, with vertigo, pulse slightly increased in frequency, not cold. Somewhat excited, no perspiration. She recovered within two hours and without any remedy save the inhalation of ammonia.

Case 3 was a young man similar to *Case 1*, yet not quite so strong, but with identical complications, which alarmed him very much. I gave him morph. sulph. hypodermically, with the inhalation of aq. ammonia and nitrite of amyl, with prompt benefit. In each case the features were severe, yet not dangerous.

MEDICAL PROGRESS.

PAPOID AND PEPSIN.—PROFESSOR D. FINKLER draws the following conclusions from some comparative experiments between papoid and pepsin: From three experiments with meat it was seen that papoid shows a more energetic peptonizing power than pepsin, and specially so when the proportion of the liquid to the albumen is small—*i.e.*, in the proportion of concentration in which food generally exists in the stomach and in the intestines. The great variability in the quality of commercial pepsin (some of which will under the most favorable circumstances not peptonize more than 20 per cent, of the albumen of the meat) gives papoid also the preference, as it is made of one uniform quality.

Experiments with hard-boiled eggs showed that they are better digested by pepsin, if the quantity of liquid is larger in proportion. As soon, however, as a more concentrated mixture is employed superiority of the papoid is at once evident.

What effect can be obtained by the ferment in the human body?

a. Concentration of the solution is of first importance. It is impossible to create in the stomach and intestines such amount of liquid as would be favorable to the effect of pepsin. The conditions, therefore, are very much in favor of papoid.

b. Importance of the Reaction.—Pepsin acts in the stomach, but not in the intestines as in the latter. The reaction is neutral or alkaline. Papoid has little effect in the stomach, as the reaction there is acid. When, however, the stomach is neutral or alkaline, papoid will peptonize, while pepsin will be useless. The degree (amount) of acid reaction in the stomach differs greatly, especially in a stomach out of order; in which case the acid can be so highly acid or alkaline that pepsin would be of no value at all. In the treatment of stomach-catarrhs we will, moreover, find that, as a general rule, the contents of the viscus have been rendered artificially neutral or alkaline by the administration of remedies, so that in these cases pepsin will have absolutely no effect. Papoid, on the contrary, will act energetically.

c. Regarding the Time Available for the Digestive Ferments to Act in the Body.—In the case of pepsin this is necessarily very short, as the action ceases when the food enters the alkaline reaction of the intestines. In the case of papoid, which can act well in alkaline reaction, the time is practically unlimited, as it continues acting on the food during the whole time it continues in the body. For all these reasons the conditions for the effect in the human body are far more in favor of papoid than pepsin, and especially as under existing circumstances (high degree of concentration) papoid has been shown to act much more energetically. It is only too clear that the preference should be given to papoid as a digestive ferment for the treatment of dyspepsia. Besides dyspepsia, the papoid is of great importance in the treatment of diphtheria.

Its effective power consists in the circumstances that no free acid need be present in the application,

and further that the moisture of the diphtheritic membranes is quite sufficient to allow the ferment to dissolve the solidified substances of the membranes. No other ferment has so far been able to obtain these results. It is on this account that many competent experimentalists and specialists have lately made observations.

From all these circumstances there is no doubt that in papoid we have a ferment which has a great future before it, and it is for this reason that I have made a special study of the manner of preparing the papoid, and I have had the satisfaction of obtaining the most favorable results from its use in the treatment of disease.—*Therap. Gazette*, Aug. 15, 1887.

TUMORS OF THE BREAST TREATED BY ELECTROLYSIS.—DR. ALFRED C. GARRETT, of Boston, read a paper on this subject at the recent meeting of the IXth International Medical Congress. Many, or most of the tumors that so frequently occur in the human breast, we find can be completely cured if treated while young, or new—that is, while in the first stage of existence—by certain mild applications of electricity.

In the first place, to obtain uniform success by this method, we must plan to find these tumors as soon as possible after they form in the breast, while they are in a curable stage in the majority of cases. However, we already know we cannot assume that every morbid lump that grows or appears in the human breast begins from the first a simple or non-malignant tumor, though the most of them seem to do so, judging from the uniformly successful results of these treatments by electricity when applied to the selected, new, or recent tumor.

It is determined that here we must choose the form of electricity and method of application as carefully as we seek to find the curable cases; for we are not to resort to the usual electro-puncture needles, knife, wire, nor any active destructive electrolysis, nor any other means that produce solution of continuity. We are to employ simple surface applications of certain graduated, galvanic, steady currents, through peculiar, large, soft, and moist electrodes, so adjusted close to each side of the tumor as to cause this gently chemical current to completely permeate, and wash through the whole mass from side to side in its deeper parts, mainly in direction toward the axilla, for about half an hour at each *séance*. It is not enough to simply apply the two electrodes to the surface of the breast or in any manner. Moreover, we need to use a milliampèremeter to measure the current that actually passes through the tumor and gland; also a key-board that can enable the operator to pick up and increase the current, cell by cell, to the tolerant and efficient strength, which will be from ten to fifty milliampères. The current required for each individual case cannot be stated in exact terms, as it is found in practice there is a wide difference in the resistance, tolerance, and effect in different persons; yet this point is of great importance.

The result is, that out of 186 tumors treated since 1864, a record of them having been kept and looked after, 157 disappeared and have remained well. Several others did not quite obliterate, however, but left a small nodule the size of a chestnut, which in every case disappeared or remained benign. *Medical Record*, Sept. 10, 1886.

PREVENTION OF PUERPERAL SEPTICÆMIA.—DR. ARCHIBALD D. MCDONALD says: "Heterogenetic," or more plainly, inoculated septicæmia, should be unknown. That is the ideal, and I believe it may be realized by the following method, which is an intensified form of that used by a brother practitioner who had some unfortunate experience which led him to appreciate the benefit of using iodine in obstetric practice. Dr. Wynn Williams strongly advocated iodine fumigations I believe. Well, (1) the nail brush is to be used before leaving for the case; (2) using warm water and soap not previously used, the hands are washed in the patient's room, or room adjoining as the case may be; then (3) about a drachm of liquor iodi is added to about a pint and a half of warm water, and the hands thoroughly rinsed in the mixture; (4) carbolic oil (1 to 20), or in cases of forceps or turning, preferably fresh benzoated lard is used for lubrication, and the examination of the patient proceeded with.

During the progress of the case until delivery takes place the iodized water is occasionally used, and instruments are thoroughly washed (blades and handles) with it. Of course, in ordinary practice one avoids unnecessary handling of erysipelas, scarlatinal, ulcerating sores (such as scirrhus), and other infectious cases, as well as of dead bodies, or making of *post-mortem* examinations, or even shaking hands with anyone who has been in attendance on any septic case whatever.

"Autogenetic" septicæmia, I need scarcely say, is rendered less likely by avoiding lesions and remnants of secundines, through not rupturing the membranes too early, giving timely instrumental help when required, and in doing so carrying the forceps handles well forward, somewhat approaching a line parallel to that joining the umbilicus and coccyx, when the body is in the straight position, so as to lessen the danger of perineal laceration; and by careful expression of the placenta, and gentle extraction of the membranes. The same precautions in managing labor of course also help to diminish the chance of septicæmia by inoculation. Should the hands become a little hardened by the iodine, rubbing with vaseline and the use of kid gloves during sleep will remedy that not very important matter. I do not require to occupy space with evidence in support. My cases have included putrid fœtus and emptying uterus of secundines, removing placenta in abortion with vulsella and uterine forceps, adherent placenta, turning, and the various malpresentations, as well as the ordinary cases, extending over a period of six years. There has been only one case of septic pneumonia, and there I was stupid enough to use oil which I was given in the house, for lubricating the forceps. It was one of my early cases. From complications following labor, too, I have been wonderfully free. I com-

mend the practice to be used more widely than it now is.—*British Medical Journal*, Sept. 3, 1887.

DIGESTION OF CARBO-HYDRATES.—The paper of Ellenberger and Hofmeister, recently published in *Biedermann's Centralblatt*, contains a summary of their long-continued researches on this subject. They have experimented upon the horse, and their conclusions are by no means identical with those that have hitherto been received. An abstract, by Mr. J. Fletcher, of this important paper appears in the current number of the Journal of the Chemical Society; and it is so lucid and concise that we reproduce it almost *in extenso:*

"The action of saliva in the process of mastication is shown to be more mechanical than chemical. The quantity of saliva used depends on the dryness and roughness of the food rather than its contents in starch; and the authors think that the chemical activity of saliva owes much to spores, which, floating in the atmosphere, mix with the food and assist in the fermentation process. A digestive action of the mixed food takes place in the stomach when the acidity due to hydrochloric or lactic acid does not exceed 0.03 to 0.04 per cent. The left section of the stomach of the horse does not secrete a gastric juice; this is the function of the right portion. The gastric juice of the horse contains lactic, fatty, and amylaceous ferments—the latter in small quantities. Cellulose is not digested in the stomach of the horse, but muscle, fat, gelatine, and flesh generally are easily digested, bone and elastic tissues more slowly. Pepsin operates actively only when acids are present, about 2 per cent. of lactic acid or 0.2 per cent. of hydrochloric acid being necessary. The activity of pepsin does not increase in proportion to its quantity after reaching a certain point, but it rather becomes injurious. The acid which appears first in the digestive process is lactic acid, and later hydrochloric; at the time of greatest activity lactic acid is present in the upper and lower extremities of the digestive tract, hydrochloric acid being found in the intervening part. The digestion of starch in the stomach of the horse lasts for about two hours; that of albuminous matter takes place later, and occupies three or four hours after the eating of the food. The drinking of water immediately after food does not appear to hinder digestion. The secretions of the intestinal canal unite in themselves all the properties of the gastric juice, and can act as a substitute for it, and are particularly energetic in the decomposition of fats. The duration of the digestive process in the horse is long, lasting almost three days. A very active lactic fermentation of sugar takes place in the stomach and intestines, but the authors do not say that all the sugar which is lost in the course of passage is lost in that way; it is more probably reabsorbed."—*Lancet*, August 27, 1887.

CINQUEFOIL IN NIGHT-SWEATS.—DR. SAMPSON POPE, of Newberry, S. C., writes to the *Therapeutic Gazette*, of August, 1887: I desire to call the attention of the profession to a vegetable remedy, native to our soil, for that troublesome accompaniment of wasting diseases, night-sweats. Atropine is a good remedy, and in the majority of cases answers the purpose; but atropine is a very strong medicine, and must be used with great care. A simpler medicine, answering the same purpose, would certainly be better. King recommends it, but I did not get it from him; *I got it from an old negro*—from the same source that the profession got gossypium. The remedy is one indigenous to the whole country; it is therefore within the reach of us all; it is the cinquefoil, *Potentilla canadensis*, called by some botanists *Potentilla sarmentosa*. I have stopped night-sweats with it when *atropine failed to relieve*. It is pleasant to take; when drawn it has an agreeable odor, much like table-tea. The manner of preparation is to pour boiling water on a handful of the vine, leaves, and root. Let the patient drink *ad libitum*.

A supply can be obtained through the Southern purchasing agency of Messrs. Parke, Davis & Co., Charlotte, N. C., or through Messrs. Wallace Bros., Statesville, N. C., or, if not too busy, about your own homes. I hope that some manufacturing chemist will (should I be found to be correct in my estimate of it) give to the profession a fluid extract of the root and plant.

CUTANEOUS SENSIBILITY IN RHEUMATISM.—L. BARBILLION says that as a rule disturbances of cutaneous sensibility are present in this affection. Ordinarily the tactile and pain sense is diminished, sometimes increased. The sense of heat is also affected, but most frequently electrical sensibility is disturbed, and it alone may be affected. For a more or less long time after the attack there is more or less complete anæsthesia and loss of sensibility to Faradic excitation. These changes are generally limited to the part of the skin covering the affected joint, but may extend over the entire limb. The diminution of the reflexes, the muscular paresis, the muscular atrophy following indicate, as do the disturbances of sensation, that the nervous system is affected—acute articular rheumatism.—*L'Union Médicale*, September 13, 1887.

AMYL-HYDRATE AS AN ANÆSTHETIC.—At the last meeting of the South-west German Association of Neurologists and Physicians for the Insane, PROFESSOR VON MERING announced that he had found a most valuable anæsthetic in amyl-hydrate (tertian-amyl-alcohol); that he has tried the same in sixty cases of insanity, paralytics, and melancholia, insomnia caused by nervousness, and in feverish diseases; a dose from 30 to 75 minims, sleep lasting from six to eight hours; no bad results; the taste is pleasant as that of paraldehyde. Von Mering gives this formula:

℞ Amyl hydrate ..... ʒi.
Aquæ dest ..... ʒx.
Ext. liquirit ..... ʒi.

—*Therapeutic Gazette*, Aug. 15, 1887.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.
PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, OCTOBER 22, 1887.

THE TREATMENT OF RECENT CASES OF INSANITY IN ASYLUMS AND IN PRIVATE HOUSES.

The above constituted the subject of DR. G. FIELDING BLANDFORD'S address before the Ninth International Medical Congress in Washington, D. C.; and it was presented with the ability and practical good sense characteristic of the author. Correctly assuming that recent insanity in very many cases is a curable disorder, Dr. Blandford proceeded to discuss the question, whether recovery will be likely to take place only under asylum supervision, or is there a fair chance of curing the sufferer in a private house or the house of a medical man? In this country, and in recent years especially, it has been urged as a maxim that the earlier cases of admitted insanity can be removed to an asylum for treatment, the better is the prospect of their recovery. And Dr. Blandford readily admitted that, "for the great majority of patients asylum treatment is the only available method," while he claimed a certain proportion of insane persons whom it was important to treat, if possible, outside of an asylum. In specifying this class of cases thus desirable to treat without legal adjudication or assignment to an asylum, he mentioned females of high rank whose friends are reluctant to apply for the necessary certificates; young persons of both sexes whose confinement in an asylum would constitute a great barrier to their getting employment after their recovery, and sometimes mar their prospects for life; cases of maniacal excitement or acute mania, caused by the use of alcoholic or other anæsthetics, or by mental excitement in subjects of a highly nervous or hysterical temperament; and many cases characterized by little excitement, and only such delusions as are harmless in their tendencies.

It may be questionable whether Dr. Blandford did not allow too much influence to the popular prejudice, or so-called *stigma* supposed to be incurred by treatment in an asylum. The fact of having been treated in an asylum for insanity undoubtedly operates as a hindrance, in some degree, to subsequent employment and the attainment of certain social relations so far as such fact is known. But does not the detriment to the individual come from the fact of having once been insane, and the fear on the part of friends and employers that the same might recur, at any time in the future, rather than from the fact of whether he had been treated in an asylum or in a private house? The chief practical questions would seem to be, in determining the proper course of treatment for individual cases, are, *first*, as to the probable duration of the derangement; *second*, as to the ability to command the necessary medical attendance with thoroughly judicious nursing; and, *third*, the occupancy of such rooms as admit of the reasonable seclusion and safety of the patient. That there are constantly occurring cases of acute insanity arising from temporary causes, which would recover in from one to six weeks, under the control of a judicious physician and two quiet, faithful nurses and the exclusion of interested and excitable friends, better without removal to an asylum than with, has been demonstrated within our own observation. We are satisfied that in this country there is not sufficient attention given to the proper discrimination in this respect, and too uniform a tendency to send all cases to asylums, either public or private. Dr. Blandford's address is timely, and will have a good effect upon the profession generally.

MASSAGE AND METHODICAL EXERCISE.

The increasing experience with massage, and the appearance of several good books on the subject have given an impetus to the study of massage and methodical exercise that is gratifying. In short, there seems to be a tendency in more recent therapeutics which leans towards a decreased use of drugs and an increased observance of the laws of hygiene, in the broadest sense; and in so far as the use of mechano-therapy is concerned this is really going back to the first principles of the medical art. In fact, an intimate connection may be traced between the revival of medical gymnastics, or muscle exercise for the purpose of healing disease, and the revival of the ancient gymnastics as a part of the necessary education of the body, though the revival of the former took place at an earlier date. Hoffman wrote more wisely than he knew, perhaps, when he said in

the early part of the last century: "Medicine will never progress until we apply the laws of mechanics and hydraulics." But it was not until a century after this that the Swede, Ling, reëstablished the gymnastics of the ancients on a scientific basis, and became one of the first to elaborate a complete system on anatomical and physiological grounds. The system gradually found adherents, until in 1876 von Mosengeil published in Langenbeck's *Archiv* the first complete and scientific treatise on mechanical manipulations physiologically considered.

The most recent, and one of the ablest of the contributions to this subject is "Massage and Methodical Muscle Exercise," by Dr. J. Schreiber, director of the Sanitarium Alpenheim, in Styria; the book has been well translated by Dr. Walter Mendelson, of New York, and is issued by Lea Bros. & Co., of Philadelphia. Schreiber has given in this work such a clear exposition of the whole subject, and so little general attention has been paid to it in this country, that a general analysis of the work may be interesting to our readers.

As with many scientific practices, in the movement-cure empiricism preceded scientific demonstration. It is now time, however, that empiricism be wholly excluded from the practice of massage, movement-cure, or mechano-therapy, as we may choose to term it. In order to understand the action of mechano-therapy it is first necessary to know something of its physiological effects: The primary (purely mechanical) effects consist in the removal of lymph, exudations, transudations and extravasations, the destruction of exudations by pressure, the removal of vegetations by frictions, and the solution and removal of adhesions. The secondary effects act by increasing the circulation, by stimulating the muscular and nervous systems, by setting up molecular changes, and producing consequent changes in sensation, and by affecting alterations in the processes of general nutrition. Inasmuch as mechano-therapy, by removing an exudation causing pain, may relieve pain it may be fairly claimed as an analgesic; and as the manipulations empty the lymphatics, and cause tumefaction, heat and redness to disappear, an antiphlogistic effect is produced; and as an accumulation of fluid may be prevented or removed it is plain that mechano-therapy has the power of causing resorption. In regard to the secondary effects, there is a physiological theorem of great importance for the proper understanding of the subject, and one which is of practical application in the treatment of neuralgias: "Any source of energy conveyed to a nerve from without first expends itself in producing molecular change, and this is again converted into energy manifesting itself through the various forms of innervation." But as yet we do not know the nature of the translation of this molecular change into nervous energy. Of the chemical changes during nervous activity we know less than of muscle metabolism; but the more we know of these the more easily will we understand the as yet obscure points in mechano-therapy.

That systematic exercise is one of the best means of preserving and restoring the proper balance in the distribution of the blood in the body is recognized by all physicians. Local hyperæmias can be made to disappear by exercise, as all brain-workers know. Sommerbrodt has shown that in all exercises which increase intra-bronchial pressure, as singing, laughing, rowing, swimming, etc., the effects produced on the circulatory apparatus are: diminished tension of the arterial walls; increased cardiac action. When the exercise ceases the arterial tension rises again, and the heart beats slower. Through its action on the circulation and heart active muscular exercise has distinct effects on the skin and kidneys, on the deposition and removal of fat, and in fact on every function and tissue of the body. Du Bois-Reymond pointed out in his excellent address on *Exercise* six years ago that muscular exercises are really more exercises of the central nervous than of the muscular system; that they are especially exercises of the brain and cord; and that all species of bodily exercises are not simply muscular gymnastics but nerve gymnastics too. This fact will be especially appreciated by those who have seen the beneficial effects of regular muscular exercise upon the insane, and upon anæmic and overworked girls. By muscular exercise, too, we cultivate the sensory and the mental function as well as the motor nervous apparatus, especially when the exercise consists of complex movements. And Johannes Müller made an observation which strikingly confirms the truth of what Du Bois-Reymond says, and upon the recognition and utilization of which the gymnastic treatment of chorea depends: that perfection in bodily exercise consists often as much in the suppression of useless movements as in the acquirement of those desired.

In regard to the treatment of disease by mechano-therapy, a subject of special interest to the practitioner, Schreiber says that mechano-therapy, in accordance with its physiological effects, will be successful where it is desired to produce the following results:

1. To cause an increased flow of blood to the muscles and soft parts, increasing thereby the circulation and removing accumulations of the waste tissue, whose retention causes various disturbances of function. To strengthen muscular fibres, and by setting up molecular vibrations to induce changes, not only in the muscle and nerve fibres, but perhaps even in the nerve centres themselves.

2. To cause the resorption of exudations, transudations, and infiltrations in such organs as are accessible. To effect the separation of adhesions in tendon sheaths and joints, without recourse to the knife. To remove, by grinding away, intra-arthritic vegetations. (Direct effect.)

3. To increase, by passive and active exercise of all the muscles, the oxidizing effect of the blood, in this way correcting disturbances in its composition, and stimulating all the vegetative processes.

4. To relieve the congestion of such internal organs as the brain, lungs, intestines, uterus, kidneys, etc., by increasing the flow of blood to the muscles.

5. To stimulate directly the sympathetic nervous system, thus increasing secretion, and reflexly the activity of unstriped muscle fibre, and so relieving various functional derangements.

6. By systematic exercise (health gymnastics), to educate morbidly affected muscles, to convert abnormal into normal actions, and to suppress useless movements.

In his section on the mechanical treatment of neuralgias and muscular rheumatism Schreiber emphasizes the fact that a diagnosis between the two affections is not always easy, as they frequently coexist. In claiming good, and even brilliant results for mechano-therapy in this field, he bases his claims only on long-standing cases that have resisted all other means.

In regard to the mechanical treatment of chorea it is interesting to note that Laisné, after numerous observations, concluded that: 1. None of the means hitherto employed against chorea can show such uniform success as gymnastics. 2. The mechanical treatment is applicable to almost all cases, whereas the medicinal very frequently is not. 3. The improvement begins as soon as when sulphur baths are used, while the sedative action usually manifests itself within a few days. 4. With the arrest of incoordinate movements, the general health of the child markedly improves, so that not only the chorea, but the accompanying anæmia is cured as well.

AN ERROR.—In a previous number of THE JOURNAL, p. 407, we announced the death of Dr. Richard Quain, of London, as we found it in the daily secular press. From a recent number of the *British Medical Journal* we learn that it was Mr. Richard Quain, a cousin of the eminent anatomist, who died at the advanced age of 87 years, while Dr. R. Quain remains in good health.

THE AMERICAN PUBLIC HEALTH ASSOCIATION, will hold its fifteenth annual meeting at Memphis, Tenn., on Tuesday, Wednesday, Thursday and Friday, November 8, 9, 10 and 11, 1887, in Young Men's Hebrew Hall, corner of Union and Second streets. Dr. G. B. Thornton, of Memphis, Tenn., is Chairman of the Local Committee of Arrangements, from whom all needed information concerning railroad fares, hotels, etc., may be had.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Special Meeting, September 19, 1887.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. F. W. PAVY, F.R.S., of London, addressed the Society upon:

SOME MORBID CONDITIONS OF THE URINE.

I am before you to say a few words upon certain morbid conditions of the urine, and my hope is that we may compare notes of observations in the old world with observations in the new world. I shall first of all refer to albumin. Albumin in the urine with us was formerly regarded as a matter of the most serious import, but we are now beginning to recognize that a certain amount of albumin in the urine is not always of grave import. My own practice lies very largely with urinary diseases, and patients coming under my care always have the urine examined by an analyst; and I am frequently meeting with a certain amount of albumin in the urine, without its presence being attended with anything that would lead me to suspect that a grave condition exists. In association with diabetes, it is not at all uncommon to find, when the patient first comes under observation, a certain amount of albumin in the urine; but when the patient is put under treatment for the diabetes, it is not infrequently found that the albumin disappears in the course of a few weeks. In these cases of albumin in the urine, we must look to the general condition of the patient to see whether or not there are other indications of the existence of grave renal disease.

There is another condition which I presume has been brought before the profession in America, in which albumin exists at a certain time of the day, and not at others. I have suggested for this condi-

tion the term *cyclic albuminuria*. I have studied these cases for some years past, and I should think that they occur in this country as well as in the old world. I know that they occur in Germany, for the matter has been taken up there and followed out. This condition is observed in persons who are excitable and of a nervous disposition, and as a rule in young persons, although I have met with some cases in the middle-aged. The albumin is to be met with at one time of the day and not at others. These cases are recognized, as it were, only by accident. Sometimes the urine is examined on account of some pain in the loins, but most frequently these cases are discovered through examinations for life insurance purposes, or for some branch of the civil service, as is required by the Bank of England. So long as the individual maintains the recumbent posture, no albumin will be detected, but in one and a half or two hours after rising the maximum quantity of albumin will be found. As a rule, the quantity of albumin declines toward evening, and on going to bed it has entirely disappeared. Sometimes a trace of albumin is to be found in the afternoon and evening, but the first urine passed on rising in the morning contains no albumin whatever. These cases seem to be of no serious import. I suppose that the presence of albumin depends on the condition of the vessels. I suppose so, but certain it is that these cases are not associated with any constitutional condition. I now come across quite a large number of them.

I shall next refer to *sugar in the urine*. This is another morbid element which has varying degrees of importance. In young persons it is of the gravest import, while in elderly persons it is not so serious. In early life I have known cases to go on for years, but this is the exception; the usual duration is about two years. Ultimately they all terminate unsatisfactorily. After the middle period of life, however, sugar in the urine has a very different significance. In young subjects we have a disease which seems to be of a progressive nature. Notwithstanding whatever we may do for it, there is something which insidiously progresses in the system and leads ultimately to a fatal termination. But after the middle period of life a good deal depends upon the patient himself. Under proper management the disease may, as a rule, be held under control and the patient live for years in a satisfactory condition, but to accomplish this, rigid measures of treatment must be carried out.

One may express in a very few words, and without advocating any idea or theory, the precise nature of *diabetes mellitus*, or sugar in the urine. I should speak of it as a defective or faulty assimilative action—a faulty chemistry. The elements of the food which we take undergo chemical change in the system, by which they are rendered useful. A certain group of principles entering largely into the composition of our food, are the carbohydrates. These principles in diabetes do not undergo their proper chemical change and thus become eliminated from the system. What do we observe in a state of health? A person takes one of the carbohydrate group, it makes no difference which—starch, grape sugar, cane sugar, dextrine, or sugar of milk—they all behave alike in the system, and it is so changed as to be rendered subservient to the requirements of the system. In a state of health, we see nothing more of them. Not so in diabetes. In the diabetic these carbohydrates are no longer consumed. There is a faulty disposal of them. Received into the alimentary canal and afterward absorbed, they do not undergo their proper transformation, but pass off from the system in the form of sugar in the urine; so that I say, looking at these two conditions, a condition of health and a condition of diabetes, we may describe diabetes as a faulty disposal—a faulty transformation or assimilation of the carbohydrate elements of our food. In diabetes, in proportion as these carbohydrates are taken, so will be the amount of sugar in the urine. This I can say without any hesitation whatever.

In order to follow a case of diabetes satisfactorily, I consider that a quantitative examination of the urine should be made, and, for myself, I feel quite in the dark as to the progress of a case unless I have this quantitative examination. In my own practice, I keep an analyst who examines the urine of patients—a night and morning specimen—and directly I get the analytical report, I can read off exactly the condition that I have to deal with. Without this I should be perfectly in the dark as regards the progress or the severity of the case. It does not do to rely on the specific gravity. I have met with a specific gravity of 1.040, without any sugar in the urine. Medical men are often concerned over the specific gravity of the urine. The patient may have been put under treatment, but still the specific gravity keeps up to 1.032 or 1.035, although the urine is free from sugar. Under these circumstances, I say to the medical practitioner: Do not concern yourself with the specific gravity. If the urine is free from sugar, the high specific gravity is a favorable sign, as showing that the kidneys are equal to good work. If the kidneys were diseased, there would be a low specific gravity. The high specific gravity may be kept up by the passage of only a limited quantity of water, and by the nitrogenous diet which the patient is taking, adding to the elimination of urea. On the other hand, a low specific gravity may sometimes be met with where there is a considerable quantity of sugar in the urine. I have met with a specific gravity of 1.009 or 1.010, and yet the urine contained a considerable quantity of sugar. These have been mixed cases of diabetes insipidus and diabetes mellitus. They are proven to be mixed cases by the fact that when the patient is put under proper dietetic treatment, the sugar disappears, but the quantity of urine keeps up. I myself do not attach so much importance to the specific gravity as is done by certain medical men.

In testing the urine for sugar, my opinion is that the copper test is by far the best. As we all know, Fehling's solution is the test generally employed, but there is this disadvantage about the Fehling's solution, it does not keep well; after being kept some time, it throws down a precipitate without the

presence of sugar. This had led to many mistakes in diagnosis. I have frequently had patients sent to me with the statement that they were suffering with diabetes mellitus, when the only trouble was that a faulty Fehling's solution had been employed. Some years ago, I directed my attention to the question whether or not the ingredients of the Fehling's test could not be put together in the form of a pellet, and the solution be made as required. Certain difficulties were experienced at the outset, but these have been overcome. The pellets, as now made, consist of sulphate of copper in the anhydrous form, Rochelle salt, and potash. It is necessary to separate the sulphate of copper from the potash. This is done by first putting in the die the sulphate of copper, then a little Rochelle salt, next the potash, and, finally, more Rochelle salt. The pellet, after being made, is surrounded with waxed paper and kept in a well-stoppered bottle. If properly prepared and handled with care, the cork not being left out of the bottle, these pellets will keep indefinitely. There is this advantage about the pellet—it will never deceive you, for if it is allowed to absorb moisture, it at once becomes unfit for use, the oxide of copper being thrown down in the form of a black precipitate.

In the treatment of diabetes, I attach the greatest importance to diet. I do not consider that you can get on with the management of these cases unless you exclude as far as possible those principles of which there is a faulty assimilation. If sugar appears in the urine, it must previously have existed in the blood. I know from frequent examinations that the blood contains a trace of sugar, which may be represented in figures as from 0.5 to 0.8 part per 1000. In harmony with this condition of the blood, there has been a trace of sugar in the urine.

The ammonia-cupric test is the one I employ as a quantitative test. It consists of Fehling's solution with the addition of ammonia. With the Fehling's solution there is, on the addition of saccharine urine, a precipitate of the suboxide of copper, and, for quantitative purposes, this precipitate interferes with the determination of the exact time when complete reduction has taken place. While the presence of ammonia does not interfere with the reduction, it keeps the reduced suboxide in solution, and we get the decoloration without the formation of any precipitate whatever. The addition of ammonia gives a more intense blue color to the Fehling's solution, and this is brought by the reduction to the color of water without the formation of any precipitate. With the apparatus in perfect order, the quantitative determination can be made in two or three minutes. This test is so delicate that ordinarily, to perform it satisfactorily, you have to dilute the urine 1:20, and where it contains much sugar, 1:40. I usually determine the proportion of sugar per thousand of urine, but if it is desired to determine the number of grains per ounce, this can be done by multiplying the quantity per thousand by 0.4375.

In examining the urine of a diabetic, I generally desire that a night and a morning specimen be brought. When a person lives as people ordinarily live in England—that is to say, taking a meal on rising in the morning, breakfast; a meal in the middle of the day, lunch; and a meal in the early part of the evening, dinner—the urine passed on going to bed contains considerably more sugar than the urine passed in the morning. When a person dines in the middle of the day and sups shortly before going to bed, then the conditions are reversed—there is less sugar in the night water than in the morning water. Over and over again, by the quantitative examination of the urine, I have detected errors of diet where the patients have had the greatest desire to keep to what was right. A person who has been passing only a little sugar, brings a specimen which contains a large quantity of sugar. Under such circumstances we must look for some error in the preceding meal. In one case this proved to be blanc-mange which had been made with corn flour. Blanc mange for the diabetic should be made with cream and gelatine or isinglass. In another case a patient had been passing very little sugar, when suddenly the quantity increased. Careful questioning revealed no error in diet, until it was learned that the patient had substituted for the bran biscuits which he had been using others said to be "just as good," which examination showed to be made of the whole meal. I refer to these cases to show the value of the quantitative analysis.

In the treatment of these cases, the exclusion of the carbohydrate elements of the food should be as complete as possible. In the case of a person in the middle period of life, I first put the patient upon a strict diet. Very often the sugar for a time lingers in the urine. It is materially diminished, but has not disappeared. I may also say that I have, in addition, recourse to opium, codeia, or morphia, for I believe that these drugs have an important influence in controlling the disease—or, to put it in other words, they restore the assimilative power. Certain it is that under the influence of these drugs and strict diet, sugar after a time disappears from the urine; and after the urine is kept free from sugar for a few months, I find that the individual has a certain amount of assimilative power over the starch of bread. I test this by giving him a couple of ounces of bread. Frequently there is no reappearance of sugar. If there is no return after this has been continued two or three weeks, I increase the quantity to three ounces per diem. Then, if there is no return, to four and one-half ounces; and finally, to six ounces. Then the person is in the position of a small bread eater. I recommend persons to be content with that. They can very well give up potatoes and sugar, but to give up bread is a serious matter with many people. When a person can take six ounces of bread per diem he is not in an unfavorable condition. Many of these persons can continue to take this quantity of bread with no return of sugar in the urine. If, however, they go further and resume their ordinary diet, there will be a reappearance of sugar. The urine must be taken as the guide. Treating the case in this way, my experience is that, after the middle period of life, these patients do exceedingly well.

I must apologize for the crudeness of these remarks, for I have had no time for preparation. I thank you most heartily for the attention which you have given to me. I cannot close without thanking you and your countrymen for the cordial reception given to myself and my confrères by everyone with whom we have come in contact.

DR. JAMES TYSON said: It is needless to say how much indebted we all feel to Dr. Pavy for his remarks, and in the brief time allowed for discussion. I desire first to say that I think we, in America, have passed through much the same transition in our views as to the import of albumin in the urine as has taken place in England. The fact is thoroughly recognized that albumin may be present without any serious import; but the explanation of these curious albuminurias is still unsatisfactory. There are a certain number of them which are clearly the result of diet, and may be called alimentary albuminurias, but that all cases cannot be thus explained is shown not only by the cases alluded to by Dr. Pavy, but also in such as those where the urine on rising is free from albumin, but in which within an hour afterward the urine passed is albuminous, although no breakfast has been taken. The crucial test for the determination of the gravity of an albuminuria is the presence or absence of casts. I have found that in these harmless albuminurias tube casts are invariably absent; and where there is a constant association of albumin and tube casts, it, of course, means renal disease, no matter how slight the general symptoms may be.

With reference to sugar, we also entertain much the same views. In my hands Fehling's solution has proven the most satisfactory test, although open to the disadvantages alluded to by Dr. Pavy. Much, however, may be done to preserve it; if the bottle is kept corked and in a dark place, the solution will keep for a much longer time. I have also obtained satisfactory results in this respect from a Fehling's solution in which mannite was substituted for the tartrate of potassium and sodium. I have found that the pellets made in this country rapidly spoil.

In reference to the treatment, we largely agree. I am inclined to believe that certain sugars, and especially certain fruit sugars, are better managed by the diabetic than are others. Thus, I think that a patient may eat an apple, or even an orange, without much disadvantage, whereas the use of grapes is always attended with an increase in the quantity of sugar. The same is true of milk sugar. I am satisfied that milk is a good diet for most diabetics, although, of course, it is not a cure. The dietetic treatment is, for the most, efficient; but, so far as my experience with drugs goes, I am satisfied also that the preparations of opium, and especially codeine, are the most efficient adjuncts to the dietetic treatment. They are, however, open to the objection that they produce constipation, which almost always aggravates the other symptoms of diabetes.

DR. J. W. HOLLAND said: The remarks of the previous speaker have reminded me of my experience with glycerine as an organic medium in Fehling's solution. This makes a solution which keeps for a considerable time, although not indefinitely. At the Jefferson College laboratory we employ two solutions of definite strength, one containing the sulphate of copper, and the other Rochelle salt and the caustic potash or soda. These are mixed in equal quantities when it is desired to employ the test.

In the use of Dr. Pavy's quantitative test, I find one small objection—which can be obviated by extreme care—that is, if the solution is boiled in an ordinary capsule the ammonia will be driven off and reoxidation of the copper follows. If a flask is employed the ammonia will not escape so rapidly.

One form of pellet lately brought to my attention is the indigo-carmine pellet. This seems to keep indefinitely. It is composed of sodium carbonate and the sulphindigotate of sodium. It is a very sensitive test—even more sensitive than the Fehling's solution.

Dr. KLEEN, of Karlsbad, was introduced, and said: I had, two years ago, under my care at Karlsbad, a most singular case. Mm. X., of Gothenburg, fifty years old, then consulted me, telling me she was suffering with diabetes, that the illness had accidentally been discovered the year before and that she had then visited Karlsbad (1884) and consulted Professor Seegen (who since that time had retired from practice).

Mm. X., when I saw her, presented no symptoms of diabetes or of any other illness, except some nervous debility. I gave her a considerable quantity (100 grams) of cane sugar, collected the urine for some hours, and afterward for twenty-four hours, but found no glucose in it. I did not succeed better after she had dined copiously on rice and other amylaceous food. I then pronounced her free from diabetes. I still kept the case under observation, however, and at last found, upon examining the urine two hours after a meal, which had ended with a large portion of sweet fruits (mostly pears), a small quantity of reducing substance. Both Fehling's and Nylander's (bismuth) solutions showed reactions corresponding to the one we got, with urine containing 0.1–0.2 per cent. of glucose. When testing the urine with polarization by the spectroscope, I found, to my utter surprise, a slight deviation *to the left*. The urine did not contain a trace of albumin. I was at a loss what to think of it, and submitted it to the test of fermentation. The same day, however, I received a letter from Professor Seegen, stating that when the patient was under his care, her urine had contained much larger quantities (as much as 3 per cent.) of reducing substance, and that he had found that substance to be *levulose*. At the same time Professor Seegen sent me a supply of glucose, asking me to submit the patient to a test of her toleration of that substance. So I did, and found that portions of 100 grammes or more did not produce more than very small quantities of reducing substance in the urine—that substance, to judge from a very slight deviation to the left in a good instrument, being levulose.

Worm-Müller has proved that glucose, administered in large doses, passes to a certain (small) por-

tion unchanged into the urine, even in healthy persons, while it passes to a much larger proportion into the urine of the diabetic patient. He has also found that all the different species of sugar, administered in large doses, in a certain (small) proportion pass *unchanged* into the urine even of healthy persons, while in the diabetic patient at least some portion of them passes into the urine *tranformed into glucose*. He believes in this latter circumstance to have found a difference, also, between persons suffering from real diabetes and those whose urine, while under ordinary diet with the common reagents, presents traces of glucose or only now and then, under peculiar circumstances and in a passing manner, contains somewhat larger quantities of it.

This coincides with my own experience so far as it hitherto goes. Like all physicians who occupy themselves with researches in this direction, I find every year persons whose urine shows traces of sugar, and now and then—especially after strong emotions, after alcoholic excesses, or after very rich meals of rich food (but, generally, not after meals *exclusively* consisting of amylacea or of cane sugar) —in a passing manner, somewhat greater quantities of a substance which shows *all* the qualities of glucose. In these doubtful cases, I usually give a large quantity of cane sugar; and afterwards often find no glucose—or only slight traces of it—in the urine, till I have boiled it with mineral acid, and thus converted a portion of the cane sugar that has passed over into glucose, whereupon I will find the well-known reaction of glucose. I consider these cases to be distinct from true diabetes, though it seems to me highly probable that they indicate a tendency to that disease, which others of larger experience than myself have also noticed—for instance, Professor Frerichs.

In the present remarkable case of levulosuria, I found that some portion of cane sugar passed unchanged into the urine. It seemed to me to be of great interest to find out how Mm. X. reacted against the other species of sugar, especially against levulose, which, with some reason, could be expected to pass over in larger proportion than in quite normal persons. I therefore had the wish to administer a large amount of honey (which is a mixture of glucose and levulose), and also to make a test with milk sugar; but Mm. X., who had heard that she should avoid sugar above all things, and who had an interest in her own case, only partly of the same nature as my own, did not wish to be submitted to further experiments, especially as I could not promise that they would be without some momentary influence on the urine. I can, therefore, only give the above description of the case, such as is already given by Prof. Seegen, who first discovered it, but I am not without hope of being able in the future to give fuller information upon it.

I am decidedly of the opinion that the case is not, clinically speaking, strictly one of diabetes. If the substance had been glucose, it would have ranged among the large number of the above-named glucosurias, continuing unchanged for a great number of years in healthy or nearly healthy persons. I was rather astonished at seeing Professor Seegen state that the urine once contained as much as 3 per cent. of levulose, but cannot doubt the accuracy of this most excellent observer. That the quantity has diminished so very much without any dietetic treatment, makes the case even more interesting than it otherwise would be. I allowed Mm. X. a tolerably good supply of starchy food, advised her only to avoid excessive use of them, and I have lately heard that the urine only now and then contains small quantities of reducing substance.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Twelfth Annual Meeting, held in the Hall of the Academy of Medicine, New York, September 13, 14 and 15, 1887.

(*Continued from page 505.*)

SECOND DAY—MORNING SESSION.

The President in a few remarks called attention to the death of Dr. John Scott, of San Francisco, Cal., and appointed Dr. Thomas Addis Emmet to prepare a memorial for the published Transactions.

DR. C. D. PALMER, of Cincinnati, read a paper on

THE THERAPEUTIC VALUE OF SOME MEDICINES IN THE TREATMENT OF HÆMORRHAGIC CONDITIONS OF THE UTERUS.

The author referred to the fact that very few papers on the medicinal treatment of hæmorrhagic affections of the uterus appeared in the eleven volumes of the Transactions of the Society. In hæmorrhage from the uterus, it is important to remove the cause where this can be found. The object of the paper was to speak of the value of certain internal remedies and their field of utility.

No drug is more frequently used than *ergot*. This is beneficial in many cases, but may aggravate some. It is of service in chronic hyperæmia and in subinvolution. Its effects are less marked in nulliparæ than in multiparæ. In the treatment of uterine fibroids, between the use of galvanism and of ergot, the field of laparo-hysterectomy must be a limited one. The hæmorrhage from fungoid degenerations and from ovarian irritation is better met by other remedies. In some cases of pelvic peritonitis and pelvic cellulitis, the hæmorrhage has been increased by use of ergot.

Digitalis in appropriate cases is of service. It is reasonably reliable in uterine hæmorrhage due to cardiac trouble. In atonic conditions of the circulation, weak heart and low arterial tension, which tend to induce passive hyperæmia, digitalis may be used.

Cannabis Indica has been the subject of diverse claims. The drug varies much in strength. It acts more especially on the nervous system. Its indications are imperfectly defined and its effects uncertain.

Bromide of potassium is useful in certain hæmorrhagic states. It is indicated where there is sexual excitement and ovarian congestion and irritation.

It is not so useful where hæmorrhage is due to uterine irritation, although in some cases of fibroid tumor the author had found it more useful than ergot.

Arsenic is of service in uterine hæmorrhage. It is not prompt in its action, but in appropriate cases it is effective. It acts as a tonic, stimulating all the functions, and especially those of the skin and mucous membrane. In chronic endometritis, with or without fungoid degeneration, a course of arsenic will be of material service. It is of value in the case of young girls when menstruation appears too frequently and continues too long. In menorrhagia at the time of the climacteric it is of service, although its effect is less decided than in the former group of cases. Arsenic is a good remedy in menorrhagia of malarial origin.

Gallic acid is the best representative of the astringent class of remedies, and has been repeatedly tested in hæmorrhage due to uterine atony. Its large dose, unpleasant taste and tendency to disorder digestion limit its use.

Active cathartics, particularly so-called cholagogues, as mercury, are useful in uterine hæmorrhage of hepatic or splenic origin.

Viburnum prunifolium, hydrastis and gossypium have been recommended. Dr. Garrigues has reported 139 cases of uterine hæmorrhage form various affections in which he used gossypium with the result of relieving the hæmorrhage in 125 cases.

The last remedy referred to was hamamelis virginiana. If thoroughly tried this is usually efficacious. The author had used this drug with satisfactory results for six or eight years. It is not equally potent in all cases of uterine hæmorrhage. For active, profuse hæmorrhage, it is inferior to ergot, but for slight, long-continued flux, when the blood is dark and venous, the hæmorrhage being passive in character, it is the remedy *par excellence*. The best preparation is the officinal fluid extract in doses of a few drops to 2 drachms. None of the remedies here mentioned were intended to supersede local medication where indicated.

DR. FORDYCE BARKER, of New York, remarked that every one of the remedies mentioned is of special value in certain cases, and success in treatment depends upon a careful selection of the cases. Arsenic is useful when the system is broken down and the patient is approaching the climacteric. Where the hæmorrhage continues and is profuse, the most valuable remedy is the fluid extract of hydrastis combined with fluid extract of hamamelis, ½ drachm of each being given. He had used viburnum prunifolium largely in passive hæmorrhage occurring at an early period of gestation, and in threatened abortion.

DR. LLOYD ROBERTS, of Manchester, Eng., had very little confidence in any drug except ergot in the treatment of uterine hæmorrhage. The great point in the use of ergot is to get a good preparation. In cases of hæmorrhage at the menopause when the uterus is flabby, and in the case of young girls, the best results are obtained by giving it in the intermenstrual period.

DR. W. BALLS-HANDLEY, of Melbourne, could not see how the remedies referred to are going to act in restraining hæmorrhage. If their use is to be supplemented by operative measures, it is hard to say what does the good. He had given ergot in fibroid tumors, but could not say that he had had the slightest benefit from its use.

DR. J. A. D. GRANT (Bey), of Cairo, Egypt, said that two years ago he was called by a doctress to see a patient. There was a tumor, and uterine hæmorrhage recurred every ten days. The case had previously been diagnosed as fibroid tumor and removal of the ovaries recommended. There was a history of syphilis, and as hæmostatics had been thoroughly tried for months, he decided to use mercury. Stimulants and cinchona bark were also given. The hæmorrhage ceased and the tumor, which was as large as a child's head, gradually diminished in size, and in three months the woman was able to return to work.

DR. H. P. C. WILSON, of Baltimore, remarked that when he excluded cases of submucous fibroids, cases of granulations and cases of polypi, the number of instances of uterine hæmorrhage is very small. He had very little confidence in any remedy as a hæmostatic in these cases.

DR. JAMES R. CHADWICK, of Boston, referred to the value of turpentine. He had used this in hæmorrhages from all causes with surprising results. Ergot given between the flows is of more service than when given during the hæmorrhage. During the flow he is in the habit of giving aromatic sulphuric acid.

PROFESSOR DOLÉRIS, of Paris, France, made some remarks on

ALEXANDER'S OPERATION.

He treats cases of retroversion of the uterus by shortening the round ligaments, where all other measures of treatment have failed. Where there is retroflexion, he first overcomes the flexion by three or four forcible dilatations and then shortens the round ligaments. In cases of prolapse, he first restores the uterus to a normal condition. If the cervix is abnormally long, it is amputated and the round ligaments are then shortened. Anterior and posterior colporrhaphy are also performed. In cases of anteversion, there is no need to shorten the round ligaments, as the pressure of the abdominal contents does not come upon the uterus as in the case of retroversion. In these cases the vaginal operation is sufficient. The object of shortening the round ligaments is not to suspend the uterus, but to antevert it.

DR. WM. L. REED, of Glasgow, said that one of the most important points to which attention should be called is that even when a successful operation has been performed in a case of chronic retroversion, you must not expect the patient to feel quite well in the course of a few weeks. All that the operation does is to restore the position of the uterus; it does not alter its condition. The patient will probably be no better three months after the operation than before it, especially if care is not taken. The after-treatment is most important. If you take a case of prolapse with the uterus down to the woman's knees, shorten the ligaments and allow her to be about in

two weeks, you need not be surprised if the trouble is soon reproduced. The patient should be kept in bed five or six weeks, and afterwards should wear a well-fitting pessary for five or six months. A pessary that before the operation could not be kept in place one hour will remain without difficulty after the operation.

Dr. A. Martin, of Berlin, had not performed this operation, but should not object to performing it when a suitable case presented itself. His experience led him to believe that we exaggerate the importance of prolapse. He had seen many cases where the patient suffered this displacement without discomfort. He did not think that an operation on the ligaments without restoration of the pelvic floor will give a certain hope that the uterus will be retained within the pelvis. In these cases he performed Hegar's operation.

Dr. C. C. Lee, of New York, had done Alexander's operation about 19 times. The operation is indicated in those cases where a pessary cannot be borne on account of the abnormal tenderness of the vaginal vault, although no distinct pelvic peritonitis or cellulitis can be detected. It may be used in cases of retroversion of the uterus with chronic salpingitis which cannot be cured without laparotomy. It is also to be employed in a limited class of cases where there is complete procidentia and where the usual plastic operations have failed to keep up the uterus.

Dr. Howard A. Kelly, of Philadelphia, had done this operation for three years. It is folly to expect a heavy uterus to be held over a large open canal by two ligaments. If the cervix is hypertrophied it must be removed. Suitable operations should be performed in the vagina. In the case of a heavy uterus the round ligaments, acting at right angles to the organ, are at a disadvantage when we attempt to raise the womb. In one case, therefore, he had substituted hysterorhaphy with entire success.

Dr. Alexander J. C. Skene, of Brooklyn, then delivered

THE PRESIDENT'S ADDRESS.

He first referred to the organization of the American Gynelogical Society, which occurred in the Hall of the Academy of Medicine, New York, twelve years ago. The Society has passed its age of development and entered upon its period of growth. The major portion of the time of this Society has been given to surgical subjects. This should not be so. As much attention should be elicited by the discussion of a functional affection as by the report of a case in which the surgeon has removed all the organs of the body with the exception of those absolutely essential to life. There is room for more definite knowledge with reference to pathology and especially with regard to nomenclature. There are still interesting fields to be explored and the greatest of these is with reference to preventive medicine. Gynecology has much to accomplish in this direction. Brilliant reputations have been made by the removal of the tubes but little has been done in the way of preventing the diseases which lead to their destruction. In the present state of society more honor is accorded him who relieves the ills of man, than is given to the one who prevents them. In obstetric medicine greater advances have been made in this direction. Vesico-vaginal fistulæ, which formerly were very frequent, have almost entirely disappeared under modern methods of obstetric procedure.

Progress in gynecology would be hastened by improvement in the medical press. In this country there is too much writing in proportion to the amount of thinking and practice. *The most copious writers are not the most distinguished in practice.*

Dr. George Granville Bantock, of London, read a paper on

THE TREATMENT OF THE PEDICLE IN SUPRA-VAGINAL HYSTERECTOMY.

The surgical treatment of fibroid tumors of the uterus, has attracted a great deal of attention during the last ten years. Considerable progress has been made in the last three years, mainly in the treatment of the pedicle. In his first operation the speaker ligatured the pedicle, applied the cautery, split the pedicle into an anterior and posterior portion and brought these together with sutures. The patient died four days later of septic poisoning. It is a peculiarity of uterine tissue that it shrinks under strong pressure. In this case the ligatures soon became loose and there was oozing into the peritoneal cavity. In the next case the pedicle was tied in three portions and surrounded by a silvered copper wire and transfixed with two long needles. It was brought into the lower angle of the wound. Thirteen hours after operation there was a free flow of blood, which was arrested by the cautery. On the ninth day, as the copper wire did not make sufficient pressure, a wire écraseur was substituted, and this succeeded in reducing the size of the stump. As now performed the operation consists of surrounding the pedicle with a soft iron wire attached to a small écraseur by which the wire can be tightened. Before cutting away the pedicle it is important to transfix it with needles to prevent the wire from slipping. After the body of the uterus is removed, the pedicle is secured in the lower angle of the wound. In some of the cases reported, the pedicle, which at the time of the operation was two or three inches in diameter, was reduced to one-third of an inch in diameter when the wire came off at the end of the eighteenth or twentieth day. The author did not think the operation could be improvd by substituting the intra-peritoneal method of treating the pedicle. Thirteen cases of pediculated fibroids treated by the extra-peritoneal method reeovered, while two treated by the intra-peritoneal method died.

With reference to the after treatment of the pedicle, Dr. Bantock said that if the pedicle is properly secured at the time of operation, the less it is interfered with the better. The serre-nœud should not be touched in less than four or five days, unless there is oozing, in order not to disturb the adhesion of the peritoneum. If there is bleeding it usually occurs within a few hours. If the pedicle is thick, it may be necessary to tighten the wire. When the

stump comes off the dry or wet method may be employed. The former consists in dusting iodoform on the part. The latter consists in washing the part with a solution of sulfuro[illegible] acid, 1:9, and then applying equal parts of rectified spirits and glycerine.

The author's statistics were as follows: 57 cases of supra-vaginal hysterectomy with 45 recoveries and 12 deaths. In 5 of the fatal cases there was pronounced disease of the kidneys, in 1 there was acute enteritis; in 2 there was hæmorrhage, in 1 there was obstruction of the bowel, and in two septicæmia.

AFTERNOON SESSION.

DR. JAMES B. HUNTER, of New York, reported a case of *Acute Dilatation of the Stomach following Laparotomy.*

DR. A. REEVES JACKSON, of Chicago, read a paper on

THE INTRA-UTERINE STEM IN THE TREATMENT OF FLEXURES.

A large proportion of flexions of the womb do not need any treatment; others are wholly unamenable to treatment; while others are made worse by attempts at treatment. The author began the use of the stem pessary in 1870. Previous to that time he had used dilatation of the cervical canal and incision of the cervical wall separately or combined. The results were unsatisfactory. All the cases thus treated relapsed. The single symptom which was regarded as an indication for the treatment of a flexion was dysmenorrhœa.

Details of the method.—Having determined the presence of a flexion, a flexible olive-tipped bougie is introduced and allowed to remain from two to ten minutes according to the amount of irritation produced. This is repeated at intervals of from one to three days. The size of the bougie is gradually increased. This treatment is continued until tolerance is induced, then, at the close of a menstrual period, a soft rubber stem, one-third of an inch shorter than the uterine canal and of a size that can be readily introduced, is passed into the uterus and maintained in position by a tampon soaked with glycerine. The tampon is renewed after two or three days and is repeated as long as there is any tendency for the stem to slip out. This soft stem should be worn six or eight weeks when it should be replaced by a larger stem, and in six or eight weeks a still larger one. As soon as the womb can be readily straightened a more rigid stem should be employed. This should be of vulcanite. The pessary should not be such as will stretch the internal os, but above this point, it may with advantage have a bulge. In a few cases it was not found necessary to resort to the stiff instrument. The hard stem is worn continuously for three months. It is then removed for a week or ten days. If there is then found a tendency to return to the former condition, the stem is again introduced and worn for another period of three months. The essential principle in this plan of treatment consists in its gradual conduct. The uterus must be coaxed and forced into proper shape. Any method of treatment which involves the rapid removal of the flexion is dangerous and not liable to be of permanent benefit. In no instance has inflammation followed the use of the stem. When the flexion is maintained by adhesions or where there is evident inflammation, the stem is not to be employed. The stem has been used by the author in 67 cases, 43 married and 24 unmarried. 9 of the former had born children and 8 of the latter subsequently became pregnant. 41 of the cases were cured, 5 improved and relieved of dysmenorrhœa and in 20 the result was not known.

DR. OGDEN, of Toronto, said that after the uterus is accustomed to the presence of a foreign body, the stem pessary is calculated to do a great deal of good. To retain the stem in position he uses dry non-absorbent cotton dusted with boric acid in preference to the moist cotton. This can be left in three or four days.

PROFESSOR LAWRENCE, of Bristol, Eng., stated that his plan had been similar to that of Dr. Jackson. He used the stem in selected cases where the only cause of the dysmenorrhœa is the bent condition of the uterus. He related the following case: A married woman aged 35 years, was sterile and suffered with dysmenorrhœa and inter-menstrual hæmorrhage. After wearing the stem for two months the bleeding ceased and the dysmenorrhœa disappeared. In six months he removed the pessary and the woman became pregnant.

DR. G. APOSTOLI, of Paris, France, read a paper on

THE TREATMENT OF UTERINE FIBROMATA BY ELECTROLYSIS.

The author described in detail the method of treating uterine fibroids, which he had recommended. He had found electrolysis successful in checking the growth of the tumor and in decreasing its size. He does not regard the plan of treatment as dangerous, having lost but 2 patients out of 200 cases, and in these instances death was not directly attributable to the operation. He has also used this method for the relief of nervous pain in hysteria, employing the constant current, long continued. This also relieves pain associated with effusion. In 4 cases galvano-puncture per vaginam has cured ovarian cysts after the treatment has been continued two years.

Dr. James R. Chadwick, of Boston, read a paper on *Ventral Hernia after Laparotomy, and Its Surgical Treatment.*

(To be concluded.)

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, May 18, 1887.

THE PRESIDENT, JOS. TABER JOHNSON, M.D., IN THE CHAIR.

DR. C. V. BOARMAN read a paper entitled

PUERPERAL TETANUS.

(See p. 522.)

DR. T. E. MCARDLE said that Dr. T. C. Smith had recently, in another Society, reported a case following abortion, and that in the discussion which fol-

lowed several other cases were mentioned, one of which followed childbirth.

DR. W. H. TAYLOR inquired if the symptoms in this case were those of regular tetanus or of one form of puerperal fever? Were the spasms clonic rather than tonic? In short, are the symptoms the same as those of traumatic tetanus?

DR. BOARMAN replied that they were. He has seen six cases of traumatic tetanus, and the symptoms in this case were just the same. In fact, traumatism was probably the cause. The patient was a well-formed woman, but ergot had been freely given; three men had worked to deliver her. At the end of the first day there were symptoms of puerperal fever which, however, lasted only a few days, when convalescence began. At the end of the seventh day there were symptoms of approaching tetanus, and on the morning of the eighth day there was trismus, opisthotonos and the risus sardonicus. The mind was clear.

DR. W. H. TAYLOR did not think that this was the usual course pursued by puerperal tetanus. Trismus is usual before opisthotonos. In this case the patient was first dosed with ergot, but tetanus usually follows injury to the cervix. Some days after this other symptoms followed, and for this reason he would hardly call this a case of puerperal tetanus. The clonic spasm is not a necessary concomitant of puerperal tetanus.

DR. J. E. MORGAN in 40 years has seen but one case of puerperal tetanus, and that was about a year ago. He was called by the gentleman in attendance and found the woman with tetanus. He made only the one visit. The woman died.

DR. KLEINSCHMIDT remarked that there was one factor in the case reported by Dr. Boarman which made it interesting—viz.: large doses of ergot had been given. What had this to do with the subsequent tetanus? It is well known that ergot will render the spinal column anæmic. Possibly this is what happened in this case, and the anæmia continuing after the expulsion of the child, the spinal nervous system would be in a condition to explode after any peripheral injury. Some authorities state that tetanus is not due to excitation of the spinal column, but to excitation of the sympathetic system. In his opinion the sympathetic system is not as important as we are apt to think it, and at any rate, the sympathetic nerves have been traced to Clark's column in the spinal cord. The sensory nerves of the uterus are of a low degree. This dulness may explain the rarity of tetanus after an injury during labor, but with the spinal cord in an anæmic state, less irritation than usual was required to excite it into a fatal action.

DR. BOARMAN said that the midwife gave probably about ℥ss of ergot during the night. The womb was rigidly contracted, which accounted for his not being able to deliver. He thought Dr. Kleinschmidt's theory very plausible. There was most likely abrasion by the instruments, and the tetanus was just as after any traumatic injury.

DR. MCARDLE asked Dr. Boarman how he accounted for the decomposition of the child and why, with a dead child, was Cæsarean section thought of?

DR. BOARMAN replied that the child was decomposed long before he saw it, and probably before labor began. The fœtus was so rotten that in attempting to deliver, the whole arm, with the clavicle and scapula, came off in his hand. The woman's people were not asked to choose between embryotomy and Cæsarean section, but they were told that either one of them had to be done and they very promptly forbade Cæsarean section.

DR. S. C. BUSEY remarked that it was very fortunate that Cæsarean section was not done, as the woman would probably have died under it. The improper administration of ergot makes the case especially interesting. There are, however, many cases in which the drug has been administered improperly without being followed by tetanus, so if it was an agent at all it was a very remote one. We have in this case the conditions usually causative, viz.: traumatism, perhaps not any more than is common after such manipulations, bad hygienic surroundings, and in addition a putrescent fœtus, puerperal fever in a few days and erysipelas in the immediate neighborhood. Everything points to sepsis, and that he believes is the most common cause of tetanus. We will have to fall back upon the theory that there is some individual idiosyncrasy which promotes tetanus. He was glad to have Dr. Kleinschmidt endeavor to account for the part played by the ergot, but we want some coincidences of puerperal tetanus and ergot before we can judge of its agency.

DR. KLEINSCHMIDT said that he admitted that the tetanus was traumatic, but he was trying to get the central nervous system in a condition in which slight excitation would produce it. It was, he said, only *probable* that the ergot acted as he explained.

DR. BOARMAN said that there was no room for doubt as to the nature of the case. All the symptoms of tetanus were present. Dr. Busey's explanation of its cause was probably correct. Schrœder makes the same statement. The patient had been in labor long before he saw her, and her hygienic surroundings, at first, were of the worst, but he removed her, as soon as labor was over, to more airy quarters. The case of erysipelas was moved as far away as possible. He used carbolic acid and bichloride of mercury douches.

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Glaucoma—Iridectomy in Detachment of the Retina—Seltzer Water for Burns—Examination of the Urine in Diagnosis of Alcoholism—Chloral in Puerperal Eclampsia.

In a critical review of Schnabel's work on "Glaucoma," Dr. Fano, in the *Journal d'Oculistique*, remarks that the greater number of ophthalmologists continue to admit that every affection of the eye, in which the tension of the organ is augmented, is a

glaucomatous affection. They persist in taking the *effect* for the *cause*, and they thus comprise under the generic name of glaucoma diseases essentially different one from the other. They confound certain cases of irido-choroiditis with plastic suffusion in the vitreous body (true glaucoma), and certain forms of atrophy of the optic nerves accompanied by hypersecretion, or rather by a slackening of the work of the absorption of the intra-ocular liquids (false glaucoma). They arrive at compromising and discrediting an operation, that of iridectomy, so efficacious in true glaucoma, so powerless in false glaucoma. The work published by Schnabel, Dr. Fano states, is a refutation of the doctrine of glaucoma admitted by the greater number of ophthalmologists, to wit: that the affection is caused by an occlusion of the filtrating passages of the irido-corneal angle of the anterior chamber, on the grounds that there exist ceratin cases of glaucoma without this occlusion, and there are cases of occlusion without glaucoma. On this theory was founded a most singular therapeutic remedy—the drainage of the eye. Dr. Fano approves of the proposition of the above-named author, viz.: that the cure of glaucoma by iridectomy is not due to the operation producing a filtrating cicatrix, which latter condition Dr. Fano considers an anatomo-pathological heresy. He also considers that glaucoma is not due to excavation of the optic papilla nor to an augmentation of the intra-ocular tension, as, if there are a great number of cases in which may be found a particular excavation of the optic papilla accompanied by an augmentation of tension of the globe of the eye, there are other cases in which this excavation does not exist, although the eye be more distended; whilst in others again, there exists an excavation of the optic papilla, without the tension of the globe of the eye being augmented.

While on ophthalmological subjects I may here note another important question treated by Dr. Fano, viz.: the value of *iridectomy in the treatment of detachment of the retina.* According to the author, whose opinion is entitled to some respect, this affection is not an idiopathic lesion. It is the consequence of a choroiditis, as there are serous or serosanguinolent effusions in other parts of the body constituting œdemas and dropsies, so there may be in the sub-retinal region. In the latter case, the effusions are the result of an obstacle in the venous circulation of the choroid. To attack by divers operative procedures: simple puncture, or puncture followed by irritating injections, drainage of the retinal sac, detachment of the retina, is to combat the effect, without suppressing the cause of the malady. In performing iridectomy we effect a local bleeding, in the neighborhood of the diseased part. Iridectomy, the author adds, is an antiphlogistic treatment directed against choroiditis, which treatment is founded on the ground of the anastomoses which exist between the blood-vessels of the iris and those of the choroid. If this expedient should succeed in arresting the progress of the choroiditis, the sub-retinal effusion will be resorbed; if the inflammation of the choroid is not arrested in its progress, the effusion will subsist, or even increase.

In a paper read before the Medical Society of Nantes, Dr. Dubois, of Villers-Bretonneaux, stated that in several cases of extensive and superficial burns, he discovered a means of almost instantaneously arresting the pain arising therefrom. This consists in slowly and continuously pouring over the affected part the contents of a syphon of Seltzer water. In one case the doctor, by way of experiment, replaced the Seltzer water by a stream of cold pure water, but the pain, which had been subdued by the former, recommenced, and disappeared again when it was reapplied. Dr. Dubois explains this effect by the combined action of cold and of the carbonic acid. He does not, however, ascribe to this remedy a curative effect, but maintains that the recovery may be accelerated by this application. Moreover, besides its efficacy, this remedy recommends itself by its simplicity.

At a recent meeting of the Société de Biologie of Paris, Dr. A. Robin read a paper illustrating the utility of the examination of the urine as a means of diagnosis in alcoholism. He was directed to this subject by the history of the case of a patient (a lady) who was laboring under symptoms of alcoholism but, owing to her social position, the diagnosis was rather difficult to establish. This, however, was effected after the examination of the urine, which revealed the following characters: Excessive diminution of the solid materials (9 grams for 950), diminution of urea (0.790), and of the nitrate total (1 gram 072), augmentation of the relative proportion between the produced and the normal phosphoric acid. All these characters constitute a syndrome which the author had met with in other alcoholic subjects. On minute inquiry being made after examination of the urine, it was ascertained that this lady absorbed from 300 to 400 grams of alcohol per day.

In the treatment of puerperal eclampsia, Dr. Dujardin-Beaumetz prescribes chloral, from 8 to 12 grams per day. It is administered by the rectum or by the stomach, but the preference is given to the latter, and he recommends that 1 gram of the drug should be given every hour until the desired effect be produced. The author vaunts this remedy as being the most efficacious he has ever found in the treatment of this affection. A. B.

BUDAPESTH.

The University of Budapesth — The Hospitals — Hysteria from Forced Sexual Intercourse—Cottage Hospital—Professor Koranyi.

This city, which is not difficult of approach from Vienna, is well worth a visit from medical men, who pass any time at all in Vienna. The situation of the city is a fine one, on both sides of the Danube, being really two cities, under one government. Buda or Ofen, on the south side of the river, and Pesth on the opposite shore. Buda is on a hill and has the imperial residence, and from here magnificent views can be obtained of the river below and Pesth and the plains extending beyond. The trip on the river be-

tween Budapesth and Lintz, some distance north, is one that will well compare with any sail in Europe. The city, and, ordinarily is meant that part called Pesth, has some fine streets and buildings, notably Radial street, lined by handsome villas, and terminating in the park; horse cars and all the conveniences and luxuries necessitated by a thriving city of half a million inhabitants. One of the buildings that most interested me, was that used as the headquarters for the distribution of the well-known aperient water Hunyadi Janos.

The University here, has about 3000 students connected with it: about 1,100 belonging to the medical department; 1,500 with that for the law, and the remainder being connected with that for philosophy, philology and kindred branches.

We visited three hospitals under the guidance of my friend Dr. Hirschler, a native of the city. All these hospitals had been built within five years, thus all having the very best and latest methods of ventilation, sanitation, heating and arrangement for work: the first hospital, that for medical cases seemed almost perfect to me, who had just come from the ill adapted wards of Vienna, with their wooden floors and wooden beds and the like. Here the wards were not large, the floors made of tiles, and the walls so constructed that they can be easily washed: each bed, they are all simple and made of iron, have what seemed a very generous amount of cubic feet of air, allotted to it and the beds, each with its neat little table, were so arranged that much of the grim hospital look was lost. Here was one of the very best cases of argyria ever seen, due to previous maltreatment.

Perhaps the most interesting case, was one of hysteria in a young woman of 22, the effect following a forced sexual intercourse by her father. She was a person of full average intelligence, but now more or less inclined to silence and gloominess. There was complete anæsthesia in the entire left side of the body; skin, conjunctiva, mucous membranes, vagina and soles of the feet, with hyperæsthesia in the other half. It was on this patient that I saw the most successful results of hypnotism. I go into this case more or less fully, because of the impression made upon me, after the unsuccessful, or only partly successful results that I had hitherto seen, not then having seen the master, Charcôt. Under the influence of Dr. Hirschler, by simply concentrating her gaze upon a lead pencil, held before her eyes, she was put under the hypnotic conditions. The sleep, in its beginning and continuance, seemed natural as may at any time be ordinarily observed. When completely hypnotized, all the muscles were firmly contracted, and as the saying goes, "she was as stiff as a board." She could be held by the head and heels, in a perfectly straight and stiff position, with no support to her back, and her limbs, when forcibly placed in any position, no matter how strained or unnatural, would remain in that position. When the arm was moved in any direction, the leg of the same side assumed a similar one, and the corresponding eye had nystagmus in more or less the same direction. She had perfect control over every muscle, and movements of coördination were well performed at the instigation of Dr. H. He would simply say, "Now, Marie, do" this or that; and she would carry out what his words suggested, no matter how ridiculous or unnatural. When told that there were hens in the room, she shook her skirt at them; when a dog was spoken of, she shrunk back; at the statement that her friends had come she stepped forward, smiled and extended her hand. The gestures and emotions of surprise, horror and astonishment were all performed at the corresponding suggestions. She answered questions that were asked her correctly; gently rubbing her throat caused her to sing; drawing the skin about the eyes into wrinkles brought out sad and mournful notes, and words that were translated to me from the Hungarian as those of one of their plaintive hymns; pulling up the corners of the mouth caused lively notes and gay words. Finally, an interesting test was made: Several pieces of blank paper, about the size of cabinet photographs, were handed to her, on one of which was a blot of ink. She was told that they were photographs of different people she knew, and she was to pick out a certain doctor whose name was mentioned. With her eyes still closed, she gazed at each one as she went through them, till she came to the one specialized by the blot; this she kept longer than the others, and started as if to give it as the desired one; she hesitated and put it under the others and continued through the pile, but soon went back till she had found this blotted paper, and after gazing at it, more or less intently, handed it to Dr. H. After this he simply blew upon her face and she awoke, exactly as if from a natural sleep. As soon as she saw me, she began to cry, not having seen me before she was hypnotized. For a while she acted as one more or less dazed after a heavy sleep.

There is a fine laboratory connected with the hospital, with every convenience for chemical, pathological and bacteriological work. Before leaving the hospital, I had the pleasure of making the morning visit with Professor Koranyi, chief of the clinic. We then visited the children's hospital, one of the best appointed and finished hospitals one can find.

Still further out from the city is the newest hospital, on the cottage plan; one building being given up to the homœopathic belief. Among the other admirable arrangements were the bathing facilities; besides the ordinary ones, there were two large tanks for swimming purposes, so arranged that water of any desired temperature can be supplied. Patients are ordered these swimming baths as part of their treatment.

There are two obstetrical and gynecological clinics, one of 60 beds and one of 40 beds, where on the average there are 500 births and 200 gynecological operations a year.

Any physician having the opportunity, will find a visit to Budapesth full of interest, and the medical profession, so far as I met them, very cordial and entertaining.

GEORGE W. NASH.

DOMESTIC CORRESPONDENCE

THE TOBACCO POISON.

Dear Sir:—The remarkable case of irascibility or mental disorder from tobacco, reported by Dr. Batten, is not so exceptional as it seems, for I know a similar instance in which the fumes of tobacco irritated the brain and mind to such a degree that the afflicted gentleman is so forcibly impelled to assault the offending smoker as to require a very decided effort on his part to resist the impulse thereto. Many a time he has prevented himself from doing so only by hastily turning and going away from the transgressor. Indeed, for the time being, he feels like killing the smoking offender, a lamentable state of mind to be artificially induced by an extraneous toxic agent, especially one in such common use as tobacco. Nothing else affects him so but tobacco, hence he is obliged to keep away from those who smoke altogether, which is a very difficult thing to do, as they intrude almost everywhere, smokers seeming to be under the false impression that they have a right to diffuse this powerful tobacco poison and afflict people at pleasure. He is thus frequently in danger of involuntarily committing a crime for which he will not be responsible, as the disposition thereto is impulsive, otherwise he would never think of such a thing as an assault, much less murder, his soul revolting at the thought, being a respectable, temperate, peaceable citizen, with no disposition to do wrong or harm any one, using no stimulants, not even coffee, as it gives him neuralgia and increases his susceptibility to tobacco. But worse still, this temporary excitement of mind from tobacco smoke is followed by prolonged mental depression with disposition to suicide, so that he has to keep out of the way of razors and other harmful articles, for fear that in some weak moment, he might use them to his own destruction. This is a terrible life to lead, from no fault of his own either, but caused by the vicious action of other people in using and diffusing a poisonous nicotian agent, which is entirely preventible, by avoiding the smoking of tobacco altogether, or at least in public.

From this, and other evidences to the same effect, which might be adduced, it is probable that the use, or exposure to the fumes of tobacco, is an occasional occult cause of quarrelling and fighting, or even murder, and a frequent source of dejection, hypochondria, melancholy, and suicide, so common, as well as nausea, vomiting, dyspepsia, biliousness, headache, neuralgia, neurasthenia, and other nervous, cerebral, and cardiac affections, malaise and systemic prostration, ill health of various kinds, with slow or sudden death, for there is no doubt that some, at least, of the many sudden, as well as lingering deaths, are from this nicotian poison, tobacco heart, depression and cachexia, or nicotism, like alcoholism, being very frequent. These are only some of the fearful penalties that susceptible persons have to pay for the indulgence of smokers, who inflict this baneful tobacco poison upon them without regard to their health or right to be exempt from this with every other other noxious agent or injury, for which they should be severely punished, and the smoking of tobacco prohibited by law in all public places. Tobacco smokers should be obliged to keep the poisonous smoke to themselves, as it is selfish, cruel and criminal to inflict it upon those who wish to be free from its pernicious influence. Instead of the victim apologizing to the offending smoker for his artificially induced nicotian irritability or mental derangement, as in Dr. Batten's patient, the apology is not only due from the smoker for poisoning him, but he is criminally liable for the offense, as he has no more right to compel him to inhale the collective nicotian principles in the form of smoke, than he has to force him to take the most active poisonous constituent—nicotia—separately, or to thrust solid, powdered, and liquified tobacco, or other poison, into his mouth and nostrils.

The deleterious effects of tobacco upon the human organism are well known. It is particularly obnoxious and penetrating in the form of vapor or smoke, especially to susceptible people, as there is a very large number of impressible, nervous, sensitive, enervated, feeble, ill and sickly persons—men, women and children—who are more or less seriously discommoded, sickened, and injured, or killed directly or indirectly, thereby, and no one has any more right to pollute the air with this pestiferous tobacco miasm or smoke than with chloroform or other poison, and compel people to breathe this potent malaria of tobacco, to the damage of health, mentality, morality, an often danger or destruction of life itself. It is a very serious offense, indeed a grave crime, for any one, by means of this noxious nicotian miasm, as with any other baneful agent, to change or derange the mental and moral with the physical nature or disposition and entire being of others to their detriment, and make them vicious and criminal, infuriate, exciting to assault and murder, despondent and disposed to suicide, as well as diseased and shortlived, when otherwise they would be amiable and benevolent, exemplary and decorous, cheerful and happy, healthy and longlived.

GEO. J. ZIEGLER, M.D.

Philadelphia, Oct. 1, 1887.

PREVENTIVE TREATMENT.

Dear Sir:—In THE JOURNAL of October 1, 1887, I notice a paper entitled "Aids in the Prevention of Fevers," by Dr. R. W. Seay, of Louisiana. It may be of some corroborative interest to readers of THE JOURNAL to have my experience in the same line laid before them. Having a city practice and being particularly interested in midwifery, it has been my fortune, good or bad as the case may be, to be called upon to treat quite a large number of abortions, both natural and the result of criminal practices, either by the patient or some of the professional scoundrels that abound in all cities. It has for four or five years been my practice (as an absolute rule), in all these cases, to give for the first 72 to 96 hours after the expulsion of fœtus, etc., hourly doses of tinct. veratrum viride. I have never given large doses, having found 1 gtt. an hour for 16 hours

out of the 24 to be amply sufficient. I have never had a single case in which any serious inflammatory trouble has arisen. I was first led to this practice by reading what Professor Fordyce Barker has said of the use of veratrum viride in puerperal fever. I believe I owe my perfect exemption from inflammatory results to this practice directly and specifically. After all severe forceps deliveries and turning operations I do the same thing, and my obstetric record is clear thus far. An ounce of prevention is better than a pound of cure, and nowhere is this more true than in guarding against possible ills following so important processes, so intimately connected with the preservation of our homes and the perpetuation of the race. Childbearing is the noblest function, and motherhood the most beautiful and endearing condition of any true woman, and as physicians it is our duty to rob it of every possible danger so far as we can do so.

JOHN W. JOHNSON, M.D. (Harvd.).

Boston, October 10, 1887.

INTUBATION.

Dear Sir:—In the last issue of THE JOURNAL appears an article on the above subject in which the writer claims an improvement, and would extract the tube by threading the extractor into it. (The thread being attached to the tube.) An ordinary person would not go to that trouble but would simply pull on the thread. It is not an improvement to leave the thread attached, but if left then the extractor would be entirely unnecessary.

F. E. WAXHAM.

3449 Indiana Ave., Chicago.

NECROLOGY.

WILLIAM WORKMAN, M.D.

William Workman, M.D., was of Scotch-English descent, born at Colerain, Mass., in 1789, and died at Worcester in his 88th year. Fitted for College at Hopkinton Academy, under Rev. Daniel Huntingdon, he began the study of medicine in 1822, in the office of Dr. Seth Washburn, and in the fall of that year attended lectures at Harvard University, continuing his studies with Drs. Flint and Mather till Aug. 25, 1825, when he received the degree of M.D. from Harvard College. He immediately commenced the practice of medicine at Shrewsbury, where he remained for ten years. In 1828 he married Sarah Paine Hemenway, whom he survived about four years.

In 1835 he went to Worcester and continued the practice of medicine till 1861, when he retired. He became a member of Massachusetts Medical Society in 1831; was elected Councillor in 1840, which position he held till 1864. Was chairman of the committee of arrangements of its annual meeting at Worcester in 1851, and delivered the annual address at Fitchburg in 1852. Was a member of the American Medical Association, and attended as delegate in 1853, 1855, 1860, 1865, 1866 and 1868. In 1831 he joined the Worcester District Medical Society, was Secretary from 1840 to 1844, Censor from 1844 to 1849, Vice-President from 1844 to 1846 and President from 1846 to 1849, and before his death gave the society his medical library. He was an earnest and constant student with quick perception and sound judgment; was a progressive and conscientious practitioner. He was a public-spirited man, giving liberally of his time and means to matters of public importance. From 1840 to 1850 he served with Judge A. B. Foster and Rev. Drs. Sweetser and Hill, on the board of overseers of schools, and after Worcester was made a city, served on its public school committee. He was one of the founders of the Worcester Co. Horticultural Society; was trustee for many years, then Vice-President, declining the election of President.

In 1862 he was appointed by Gov. Andrew, a trustee of the Worcester Lunatic Hospital, and reappointed by Gov. Bullock in 1867. In 1862, at the time of the seven days' battle, was telegraphed to in behalf of the sanitary commission, for volunteers to act with that organization in caring for the sick and wounded; although then 64 years of age, he at once offered his services, and went to Fortress Monroe, as surgeon, in charge of a Government transport. He was a member of the Union church from 1840 to his death, and always maintained an upright and conscientious Christian character.

After his retirement from active practice, he devoted his time to books, and kept well posted in the live issues of the day; the infirmities of age did not dull his perceptions or injure the vigor of his intellectual faculties. The sufferings of his last illness he bore with Christian fortitude, knowing the end was near, and calmly awaited the time when the summons to depart should come.

Four children survive him: Sarah E., wife of John O. Smith, of Chicago; Elizabeth W., widow of the late Dr. H. McPherson, of New Jersey; Louisa J. Workman and Dr. William Hunter Workman, of Worcester.

M. G. P.

BOOK REVIEWS.

A MANUAL OF TREATMENT BY MASSAGE AND METHODICAL MUSCLE EXERCISE. By JOSEPH SCHREIBER, M.D., member of K. K. Gesellschaft der Aerzte of Vienna; formerly Docent in the University of Vienna, etc. Translated, with the Author's permission, by WALTER MENDELSON, M.D., of New York. 8vo. pp. viii—285. Philadelphia: Lea Brothers & Co. 1887. Chicago: A. C. McClurg & Co.

At the close of the first chapter of his book Schreiber draws the following conclusions from personal experience: 1. Every physician having the inclination and ability, no matter where he may practice, may acquire, self-taught, and successfully employ the methods of mechano-therapy in the treatment of disease. 2. The absence of apparatus such as is generally found in the regular establishments is no insurmountable obstacle to success. It

may only render the application of the system a little more difficult, and perhaps retard the cure somewhat. 3. Old and special cases, requiring special means, special experience, and special treatment, are best referred to the establishment of some specialist. 4. Laymen, by instruction, and by observing others, may be trained to perform all the various manipulations, but allowing them the independent treatment of a case is not always without danger to the patient.

The second chapter of the book is devoted to a consideration of the physiological, primary, and secondary effects of mechanical interferences, and of the evolution of heat in muscles as a result of mechanical concussion. In the third chapter the mechanical interferences used are fully described; and the fourth chapter may be said to be in part a continuation of the third, inasmuch as "active movements," "calisthenics and the Swedish movement-cure," and "apparatus" are described, together with the physiological effects of gymnastics on the heart and circulation, on the skin and kidneys, on corpulence, on respiration, digestion, the central nervous system, and on the mind. The fifth and last chapter, of 175 pages, is on the *diseases suited to the application of mechano-therapy*. In it are considered "only such maladies whose successful treatment by mechanical means is beyond all doubt, and is generally recognized by the whole medical profession." These maladies the author divides into six groups: 1. Mechano-therapy of neuralgias and muscular rheumatism. 2. Sprains. 3. Chlorosis; chronic catarrhal gastritis; pulmonary phthisis; hysteria; hypochondria; diabetes mellitus. 4. Cerebral congestion; hæmorrhoids; and pulmonary emphysema. 5. Chronic dyspepsia and constipation. 6. Chorea and writer's cramp. This chapter, as well as other portions of the work, is profusely illustrated.

We have no doubt that this work will prove a most valuable aid to the proper understanding of a subject to which too little attention is paid. But one or two works on the subject, of which we have any knowledge, are at all equal to it, and certainly none are superior to it. The translation has been made by an accomplished German scholar.

MISCELLANEOUS.

HEALTH IN MICHIGAN, SEPTEMBER, 1887.—For the month of September, 1887, compared with the preceding month, the reports indicate that bronchitis, typho-malarial fever, influenza and typhoid fever increased, and that cholera infantum, cholera morbus, dysentery, diarrhœa, whooping-cough, and remittent fever decreased in prevalence. Compared with the preceding month, the temperature in the month of September, 1887, was lower, the absolute humidity was less, the relative humidity was more, the day ozone was much less, the night ozone was about the same. Compared with the average for the month of September, in the nine years, 1879-1887, intermittent fever, remittent fever, consumption of lungs, cholera infantum, diphtheria and whooping-cough were less prevalent in September.

For the month of September, 1887, compared with the average of corresponding months, for the nine years, 1879-1887, the temperature was lower, the absolute humidity was slightly less, the relative humidity was more, and the day and the night ozone were less. Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of September, 1887, at fifty-one places, scarlet fever at twenty-one places, typhoid fever at forty-six places, measles at five places, and small-pox at one place.

AMERICAN PUBLIC HEALTH ASSOCIATION, RAILWAY RATES.—The Association will meet in Memphis, Tenn, on Tuesday, November 8, at 10 A.M., and continue four days. The "Monon Line" (Louisville, New Albany and Chicago) and Chesapeake, Ohio and Southwestern Railroads have arranged to run a special Pullman sleeping car from Chicago to Memphis without change. A number of delegates from Illinois, Michigan, Minnesota, Indiana and Iowa are expected to attend. The railway fare for the round trip will be one and one-third fare. Dr. Irving A. Watson is Secretary of the Association and Dr. G. B. Thornton Chairman of the Local Committee of Arrangements. A number of exceedingly interesting topics will be discussed at the meeting. The first meeting of the Executive Committee will be held Monday, November 7, at 4:30 P.M. The headquarters will be at the "Gayoso," on Shelby St.

A PRIZE OF FIFTY DOLLARS IN GOLD is offered for the best essay on The Mutual Relations of Physician and Pharmacist. The essay should endeavor to show how the ideal harmonious relations between physicians and pharmacists, both as individuals and as represented in their respective organizations, may be best realized, and all competitors must be governed by the following conditions:

1. Any one interested in the subject may compete. 2. The essay must not exceed 2,000 words in length and must reach us previous to January 1st, 1888. 3. The MSS. must be free from the author's name, address, or other marks of identification, and we recommend typewriter copy wherever practicable. 4. The author's name and address must be enclosed with the manuscript on separate paper. 5. All the essays submitted in competition for the prize are to be the property of the *Pharmaceutical Era*, and to be published or not at the discretion of the editor, but names of authors will be suppressed if requested. 6. A committee consisting of five representative men chosen from the medical and pharmaceutical professions to whom the essays shall be submitted anonymously, shall award the prize, and the names of the committee will be announced with their decision.

D. O. HAYNES & COMPANY,
Publishers of the *Pharmaceutical Era*,
Box 583, Detroit, Mich.

BARON VON LANGENBECK, the great German surgeon, died on September 29, of cerebral apoplexy, in his seventy-seventh year. An appropriate notice will appear in the next issue of THE JOURNAL.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 8, 1887, TO OCTOBER 14, 1887.

Lieut.-Col. Chas. T. Alexander, Surgeon, relieved from duty as examiner of recruits at St. Louis, Mo., and ordered for duty at Ft. Meade, Dak. S. O. 235, A. G. O., October 8, 1887.

CHANGES OF STATION.

Capt. Wm. R. Hall, Asst. Surgeon, from David's Island to Ft. Custer, Mont.

Capt. C. E. Price, Asst. Surgeon, from Ft. Custer to Ft. Du-Chesne, Mont. Ter.

First Lieut. Wm. N. Suter, Asst. Surgeon from Washington Bks. to Ft. McKinney, Wyo.

Capt. D. Weisel, Asst. Surgeon, from Ft. McKinney to Ft. Sill, Ind. Ter.

Major S. M. Horton, Surgeon, from Ft. Riley to Ft. Adams, R. I.

Major D. Bache, Surgeon, from Ft. Adams to Ft. Riley, Kans.

Major J. P. Kimball, Surgeon, from West Point fo Ft. Elliott, Tex.

Capt. R. C. Newton, Asst. Surgeon, from Ft. Elliott to David's Island, N. Y.

Major B. L. Heizmann, Surgeon, from Ft. Ontario to West Point, N. Y. S. O. 232, A. G. O., October 5, 1887.

Capt. T. A. Cunningham, Asst. Surgeon, died October 12, 1887, at Ft. Lewis, Col.